

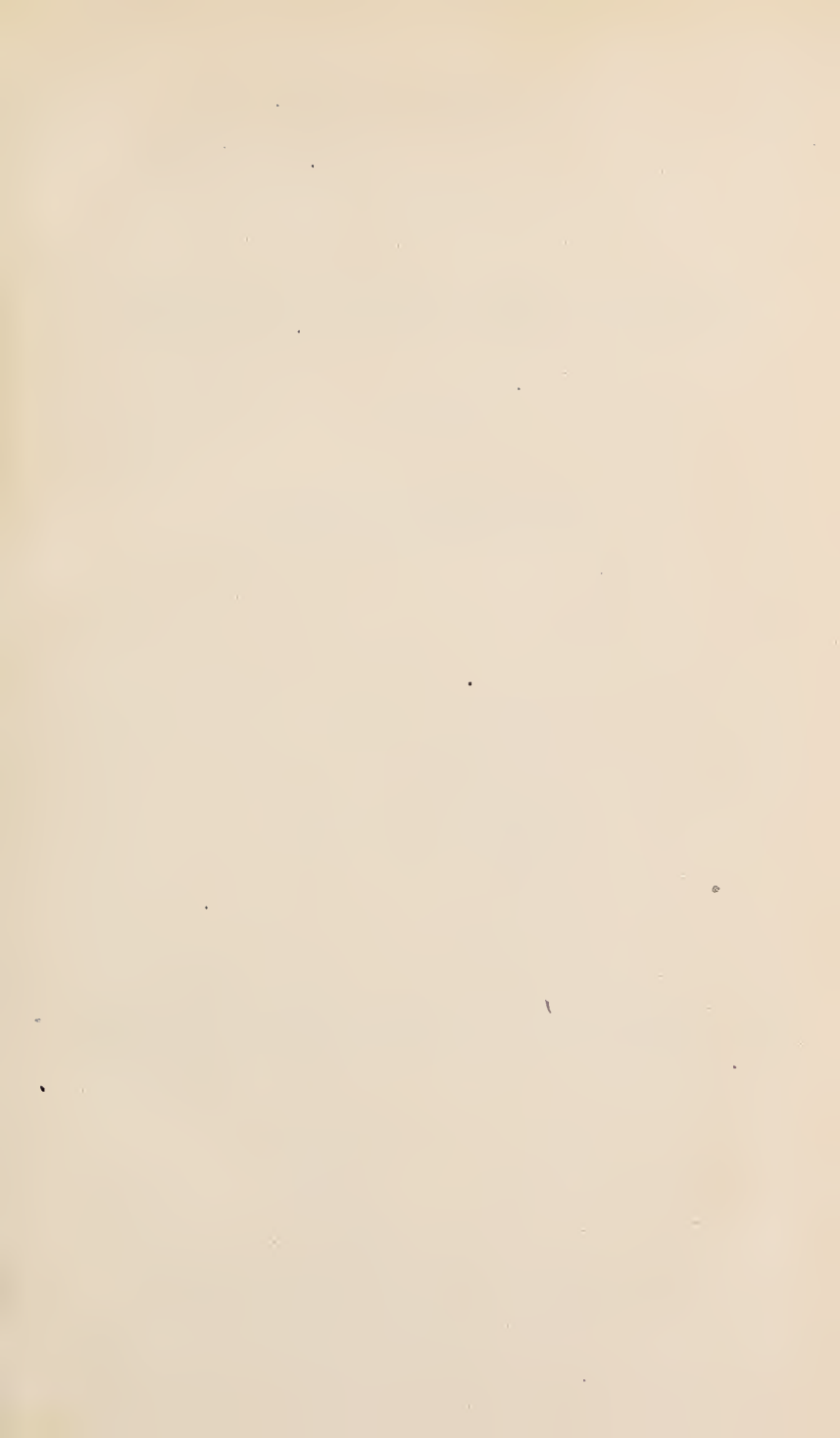
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JOURNAL
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VOL. XXX.

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“ It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted: and it will die away, if they shall entirely cease.”

SIR WM. JONES.

~~~~~

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1862.

CONTENTS.

	<i>Page</i>
Andaman Islands, papers relating to the Aborigines of the, ...	251
Antiquities near Jabalpur, a few notes on,	211
Asia, a new planet, on the discovery of,	291
Budhagupta, note on,	139
Comet of 1861, on the,	279
Eran or Erikaina, Inscriptions of, redéciphered and retranslated,	14
Gyges' ring in Plato and Nizámí,	151
Idylls, Indian No. 1. (Raghu Vansa),	111
Inscription, Bactrian, Translation of an,	337
———— Notes on the same,	347
———— Donative, of the tenth century; the Sanskrit Ori- ginal and its substance in English: with Remarks on the later kings of Dhárá in Málava,	195
———— Sanskrit, from Chedi, Decipherment of an,	317
Kashmir, Memorandum on the progress of the great Trigo- nometrical Survey of, with map and observations on the late conquest of Gilgit and other incidental matters,	99
Land-grants, on the two issued by king Hastin, bearing date in the years 156 and 163 after the subversion of the Guptas,	1
Letter on certain recent statements touching the Guptas, &c., .	383
Literary Intelligence,	47, 389
Mahánuddy river, notes on the Rainfall in the Basin of the, and the floods consequent thereupon,	216
Malacology Indian, No. 2, Contributions to,	347 <i>d</i>
Mánava Sútras, on Dr. Goldstücker's edition of the, (notices of new works relating to Sanskrit Literature),	42
Meteorological Register kept on Ross Island, for December, 1859,	32

	<i>Page</i>
Meteorological Register (Abstract of the Hourly) taken at the Surveyor General's Office, Calcutta, for the months of May, June and July, 1860,	i.
————— for August, September and October,...	xxv.
————— for November and December,	xlix.
————— for January, February and March, 1861,	lxv.
Meteorites, Report on the Shalka, Futtehpore, Pegu, Assam and Segowlie, sent from the Asiatic Society of Bengal to the Imperial Museum of Vienna,	129
Proceedings of the Asiatic Society of Bengal for January and February, 1861,	49
————— for March, April and May,	159
————— for June and July,	294
————— for August, Sept., Oct., Novr., and Dec.,	395
Rocks, Sub-Himálayan, between the Ganges and the Jumna, on the,	22
Thibet, Yunan and Burmah, Memo. on the countries between,	367
Toramánas of Eran, Gwalior and Kashmir, on the identity of the,	267
Yangtse-kiang River, from Hankow to Pingshan, notes on the,	222

INDEX TO NAMES OF CONTRIBUTORS.

Bayley, E. C. Esq., Notes on Bábu R. L. Mitra's paper on the Translation of a Bactrian Inscription from Wardak,	347
Blanford, Messrs., H. F. and W. T. of the Geological Survey of India, Contributions to Indian Malacology, No. 2,.....	347d
Cowell, E. B. Esq., M. A., Notices of new works relating to Sanskrit Literature, (Dr. Goldstücker's Mánava Sútras),...	42
———— Gyges' ring in Plato and Nizámí,	151
Fytche, Lt.-Col. A., A note on certain Aborigines of the Anda- man Islands,	263
Griffith, R. T. H., Esq. M. A., Indian Idylls, No. I.,	111
Hall, Fitz-Edward Esq. D. C. L., A Donative Inscription of the Tenth Century; the Sanskrit Original and its Substance in English: with Remarks on the later kings of Dhárá in Málava,	195

	<i>Page</i>
Hall, Fitz-Edward Esq. D. C. L., Decipherment of an Inscription from Chedi,	317
—— Letter on the Guptas, &c.,	383
—— Note on Budhagupta,	139
—— Of two Land-grants issued by king Hastin, bearing date in the years 156 and 163 after the Subversion of the Guptas,	1
—— The Inscriptions of Erikaina, now Eran, re-deciphered and re-translated,	14
Haidinger, Dr. W., Report on the Shalka, Futtehpore, Pegu, Assam and Segowlie Meteorites sent from the Asiatic Society of Bengal, Calcutta, to the Imperial Museum of Vienna,	129
Harris, Capt. J. C., Bengal Engineers, Notes on the Rainfall in the Basin of the River Mahánuddy and the floods consequent thereupon,	216
Mackay, Rev. Dr. W. S., The Great Comet of 1861,	279
Mazure, The Very Rev. Thomine de, Vicar Apostolic of Thibet, Memorandum on the countries between Thibet, Yunan and Burmah, with notes, &c. by Lt.-Col. Yule,	367
Medlicott, H. B. Esq. B. A., F. G. S., On the Sub-Himalayan rocks between the Ganges and the Jumna,	22
Montgomerie, Capt. T. G., Bengal Engineers, F. R. G. S., Memorandum on the progress of the Kashmir Series of the Great Trigonometrical Survey of India, with Map and Observations on the late conquest of Gilgit and other incidental matters,	99
Pogson, N. R. Esq., F. R. A. S., Discovery of the New Planet "Asia,"	291
Rājendralál Mitra, Bábu, on the Identity of the Toramánas of Eran, Gwalior and Kashmir,	267
—— Translation of a Bactrian Inscription from Wardak,	337
Sarel, Lt.-Col. H. A., B. A., F. R. G. S., Notes on the River Yangtse-kiang from Hankow to Pingshan,	222
Yule, Lt.-Col. H., Bengal Engineers, A few notes on Antiquities near Jabalpur,	211

	<i>Page</i>
LIST OF ILLUSTRATIONS, &c.	
Sketch of Gilgit and the Adjacent Countries,	104
Fig. of the form of the Segowlie Meteoric Specimen in the Society's Museum,	138
Ancient Temple near Jabalpur,	212
Map of the Yangtse-kiang from Hankow to Pingshan,	222
The Aborigines of the Andaman Islands,	251
Facsimile of an Inscription from Wardak,.....	337
Plates (I. and II.), Fossil shells,	347 <i>d</i>
Map of the Countries between Thibet, Yunan and Burmah, ...	367

JOURNAL

OF THE

ASIATIC SOCIETY.

No. I. 1861.

Of Two Land-grants, issued by King Hastin, bearing date in the years 156 and 163 after the Subversion of the Guptas.—BY FITZ-EDWARD HALL, ESQ., D. C. L.

Shortly before his final departure from India, Mr. Edward Thomas was apprized, by me, of the existence of two unpublished inscriptions deposited in the museum of the Benares College. On his obligingly consenting to furnish me with his reading of them, they were transmitted to him; and, in May, 1857, he was so good as to send me his decipherments from England. At that time I was unable to avail myself of the fruit of his labour, for guidance or for suggestion, as I no longer had access to the originals. Having, however, at last obtained the loan of them, and having given some study to the Hindu alphabets now obsolete, to say nothing of the assistance for which I am beholden to Mr. Thomas, I purpose to lay out the result of my researches on these ancient relics.

With the aid of the transliterations executed by Mr. Thomas, the very same with which he favoured me, an abstract version of one of the memorials in question was prepared by the late Professor H. H. Wilson. This abstract Mr. Thomas has printed:* but the Sanskrit has hitherto remained inedited.

In treating of these inscriptions, Mr. Thomas notices that the late Major Kittoe communicated, regarding them, with Colonel

* *Essays on Indian Antiquities, &c.*, by Mr. James Prinsep; Vol. I. pp. 251 and 252.

Sykes, and that "they seem to have been originally procured from Nagode in Bundalkand." Major Kittoe, when about to leave this country, presented them to me; and by me they were made over to the Benares College, of which they are now the property.

It is chiefly in respect of their incidence on the litigated topic of the Gupta era, that Hastin's proclamations possess any value. Professor Wilson surmised that both exhibit the same date; and herein he mistook, there being two dates. Neither of them, verbally considered, did he unriddle aright, as I shall evidence; and yet, by happy accident, a wrong theory conducted him to the equivalent, in words, of the later.*

* "One copy has पषोत्तर वषगे; the other, त्रिषष्ट्युत्तरे दृषते. Putting them together, the probable reading is त्रिषष्ट्युत्तरे वर्षशते," that is to say, "in the 163rd year." So writes Professor Wilson, whose romanization I have, for uniformity, turned into Devanāgarī.

As for the words given above as first, there appear, on the plates, after the initial प, two complex characters, unmistakeably क्ष and च्छ, which it will not answer to pass by as if they were superfluities. Mr. Thomas gives them, in his decipherments, in their archaic delineation, but resolves only one of them, the second, which he takes to be for श्व. Again, what next follows, the Professor's पौ, is, past all gainsay, शे; and, in place of पगे in his वषगे,—and so of पते in his दृषते,—I read, without a misgiving, शते as he also did eventually.

The first symbol of the mislection वषगे, and the first of the mislection दृषते, are still to be disposed of. In the originals they have identically the same aspect, that of almost a square, with a hook, curved forwards, depending from its lower right-hand angle. Mr. Thomas explains it, in one of the grants, as ब; in the other, as द, which it nearly resembles. My द incurs small risk of being impugned. After all, Professor Wilson held it as probable that प—which the shape of the old व is distantly like—was intended; with nothing subjoined, however, but with र surmounting it. For his प only substitute, in my readings, द, and the figures 156 and 163 will come out, in the two inscriptions respectively. Concerning the first letter of the tentative वर्षशते it remains to be said that it has no representative whatever in the two pairs of words which are fused into the tertium quid now conclusively invalidated.

One and the same person having originated both the grants, we could not expect to find them divided by any considerable interval of time. Independently of all that has been said above, the date of what I call the earlier contains a manifest inaccuracy. This I venture to heal; and in such a manner as to do no

In supersession of a proposal formerly put forth, and from which my present state of information would have withheld me, I now accede to the view that the Kahaun inscription is dated from the overthrow of the Guptas, of whom Skanda must have been virtually the last.* The land-grants adverted to have wrought this reversal

chronological violence. If, to this end, I am satisfied of the probability that the reading षट्पञ्चाशत्तमं was intentional, correct Sanskrit demanding षट्पञ्चाशदुत्तरं, I scarcely doubt that any scholar will discern, from my subsequent annotations, that the inscriptionist was, presumably, not quite incapable of such an aberration from grammatical orthopraxy as I here assume in him.

It may be added that षट्पञ्चाश was, very likely, the vernacular transitional form intermediate between the pure Sanskrit षट्पञ्चाशत् and the Hindī पचास. The Mahrāṭī is पन्नास. With this compare the Prākṛit पचासा. See Professor Cowell's admirable edition of Vararuchi's Grammar; III., 44.

* See the Journal of the American Oriental Society, Vol. VI., p. 530. Annexed is the commencement of the Kahaun memorial, with a version of it which I regard as more tenable than the one I published as above.

यस्योपस्थानभूमिर्द्विपतिशतशिरःपातवानावधूता
गुप्तानां वंशजस्य प्रविष्टयशसलस्य सर्वोत्तमर्द्धः ।
राज्ये शक्रोपमस्य क्षितिप्रशतपतेः स्कन्दगुप्तस्य शान्ते
वर्षे त्रिंशद्दशैकोत्तरकशततमे ज्येष्ठमासि प्रपन्ने ॥

'The month of Jyeshṭha being current, the empire of Skanda Gupta—the floor of whose audience chamber had been swept by gusts from the bowing of the heads of kings by hundreds; sprung from the line of the Guptas; of wide extended fame; opulent beyond all *others*; comparable with S'akra; lord of hundreds of monarchs—being extinct for the hundred and forty-first year,' etc.

My former translation, which will be referred to further on, runs as follows: 'The month of Jyeshṭha having arrived, in the one hundred and forty-first year; the empire of Skanda Gupta * * * being quiescent,' &c.

Al Birúní, as reproduced, in French, by M. Reinaud, asserts: "Quant au Goutpa-kāla l'ère des Goutpas, on entend, par le mot Goutpa, des gens qui ont été méchants et puissants; et l'ère qui porte leur nom est l' époque de leur extermination."

Now, the use, in close juxtaposition to mention of the Gupta kingdom, of so equivocal a term as शान्ति, in one inscription, and of भुक्ति, in another the later of Hastin's, was enough, as soon as observed, to arrest attention. The former word, to be sure, bears the import of 'quiescent,' 'serene,' 'tranquil,' 'unperturbed,' 'flourishing,' no less than of 'discontinued,' 'extinguished;' but the latter, if unqualified by a temporal particle, denotes 'possession,' or 'fruition,' only as a

of opinion; and it will be perceived that, in expounding them, I decline Professor Wilson's rendering of their cardinal expressions.

thing of the past. Ordinary meanings which it has—all of them metaphorical of 'eating'—are 'used,' 'worn,' 'consumed,' 'disbursed,' 'expended.' In the older of Hastin's grants the phrase is भुश्चि which, like भोग, may signify, 'tenure,' 'incumbency;' other eustomary senses of it being, at the same time 'dissipation,' 'waste,' 'destruction.' In order to substantiate the counter-position to that which I take touching the acceptance of शान्त, भुक्त, and भुक्ति, as chronologically bearing, in the phraseology of inscriptions, on the state of an empire, it must be made out that, in other writings of the same nature, these words imply duration to the period particularized.

The partiality of the Hindus to euphemism is notorious; and it is, therefore, not surprising that where, as in the Kahaun inscription, reference is made to an era determined by the annihilation of a series of powerful princes that diction which is least dyslogistic should be studiously selected. Congruously with such avoidance of an invidious term as has been indicated, it is likewise not at all singular that a direct encomium should be bestowed on a potentate who, however trueulently he may once have lorded it, having been dust and ashes nearly a century and a half, could be favourably commemorated without antagonism to the impulses of family pride and without hazard of irritating popular prejudice. Pending the emergence, as established historical entities, of dynastic successors to Skanda, it will, then, be perfectly safe to look upon him as the last of the Guptas. Even should it transpire that he was survived by descendants who were not entirely disendowed of power, yet in him, so far as we are informed, the lustre of his lineage underwent definitive and irremediable eclipse. On collation of the wording of Hastin's grants with that of the Kahaun pillar, we thus discover no trifling corroboration of the statement derived from the Arabian traveller: and his language, in passing, will endure no alternative construction.

Skanda Gupta's inscription is in the measure known as *Sragdhará*. In extracting the figures from the third verse of its first stanza, as 133, Mr. Prinsep imagined that he followed the original in putting ६ for the fifth syllable. In so doing, he has broken the metre. His reading, prosody apart, required दृ: but there was less than this, he saw, in his facsimile. And, again, 'two,' would in right Sanskrit, be expressed, in the place where he meant to impose it, by द्वा, not by his दश. The true numeral is दश 'ten.' Once more, only a few words before the error here redressed, he read, for शान्ते, which is in his facsimile, शान्ते: "after the decease" or "of the repose, i. e., death,"—of Skanda Gupta,—in allocation to विषे "in the year." See this Journal, for 1838, pp. 37, 38.

The records under consideration are on thin plates of copper. The older set consists of two pieces, having, each, a superficies of about eight inches by five. In the other set are three plates, of which two measure seven and a half inches by five and a half; while the third, only partially written over, is a little more than five inches long, and averages two in width. Near the top, the plates are perforated midway between the sides, for convenience of tying them together; and each set is accompanied by an engraved ring.

In the main, the paleography employed in these inscriptions is closely homogeneous with that which distinguishes the Allahabad monolith of Samudra Gupta. Their *z* alone is indubitably more recent. Strangely enough, however, two of their characters, *s* and *h*, everywhere occur of an earlier configuration; and of *gh* and *sh* the older forms and those of Samudra Gupta both appear in them. Still these conclusions are not inevitable; for there is nothing unreasonable in the supposition that, in some quarters of the country, by force of local influences, the constituents of the antique alphabet were not all modernized simultaneously.

My annotatory observations on small matters will be found, it is anticipated, as circumstantial as the most microscopic critic could ask for.

Not to go out of India, we have, it should seem, an example of an epoch denominated to memorialize the discomfiture of a hostile people. Agreeably to a scholiast of Varáhamihira, this is the case with the familiar era of *S'aka*; and an expression used by Brahmagupta points to the same fact. See Colebrooke's *Miscellaneous Essays*, Vol. II., p. 475.

INSCRIPTION NO. I.

नमो महादेवाय । * खस्ति । घट्पञ्चाशोत्तरे† ऽब्दशते गुप्तनृप-
राज्यभुक्तौ महावैशाखसांवत्सरे‡ कार्तिकमासे§ शुक्लपक्षतृतीयाया-
मस्यां दिवसपूर्वायां नृपतिपरिव्राजककुलोत्पन्ने॥ महाराजदेवाह्व-
यनम्रा महाराजप्रभञ्जननम्रा॥ महाराजदामोदरसुतेन गोसहस्रह-
स्त्यश्वहिरण्यानेकभूमिप्रदेन गुरुपितृमातृपूजातत्परेणा ऽत्यन्तदेवब्रा-
ह्मणभक्तेना** ऽनेकसमरशतविजयिना†† स्ववंशमोदकरेण महाराज-
श्रीहस्तिना स्वपुण्याप्यायनार्थमात्मानं स्वर्गसोपानपङ्क्तिभिरारोहय-
ता ‡‡ ब्राह्मणवाजसनेयमाध्यन्दिनकौत्ससगोत्रगोपस्वामिभवस्वामि-
सन्ध्यापुत्रदिवाकरदत्तभास्करदत्तसूर्यदत्तेभ्यो§§ वसुन्तरघेण्डिकया-
मोऽतिहृद्यः ।

* महादेवय, on the plate; and wrongly. Mistakes of this sort,—short vowels for long, and the reverse,—due either to carelessness or to ignorance, abound in these inscriptions. With the reservation of material instances, and a few others, they have been silently rectified in my copies for the press. Such misscripts as पुजा and महिमतां scarcely deserve more ceremonious handling.

Interpunction is pretty freely introduced; and the sign looks very like a *visarga*. *Visargas*, where they should be, are not seldom left out; and of *anusvāras* there is a like excess and defect. They have been set right tacitly, with two exceptions. Concurrent words which rigorous euphony would interlock, are sometimes found asunder; and they have not been conjoined. The originals in all cases double consonants which have *r* over them. I have simplified this duplication.

† In the notes to my introductory remarks, this error has been dwelt on at length.

‡ Improved from साम्बत्सरे. In the last stanza towards the end is पट्टिस्वर्घ. It is rare, I believe, for व to be put for व in an inscription so old as the present.

§ Substituted for मासं. Or, permissibly, मास might be taken in composition with what ensues.

|| Erroneously, on the plate, कुलोत्पन्नेन.

¶ An unmeaning ना which here follows has been dismissed.

** भक्तेन नैक, in the original, which also shows an excrescent त after शत.

†† On the plate the nasal element of वंश—is yoked to the sibilant, in the shape of न. And so in the second grant.

‡‡ These documents, between them, once give वाजसनेय orthographically; वाजिसिनेय, once; and वाजिसनेय, thrice.

§§ For the inscriptionist's दत्तस्य.

समन्ताद् गर्ता। उत्तरे पार्श्वे मोनपूर्वभूक्तिमयादा। सन्ध्यापुत्रप्र-
मुखानां सोत्रङ्गः सोपरिकरः अचाटभटप्रावेश्यः चोरवर्जं च।

तदस्मत्कुलोत्थैः* मत्पादपिण्डोपजीविभिर्वा कालान्तरेऽपि न
व्याघातः कार्यः। एवमाज्ञप्तम्† योऽन्यथा कुर्यात् तमहं देहान्तर-
गतेऽपि महताऽवधानेन‡ निर्दहे।

उक्तं च भगवता परमर्षिणा वेदव्यासेन।

पूर्वदत्तां द्विजातिभ्यो यत्नाद् रक्ष§ युधिष्ठिर।

महीं महीमतां श्रेष्ठ दानाञ्छेयोऽनुपालनम्॥

बज्रभिर्वसुधा भुक्ता राजभिः सगरादिभिः।

यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलम्॥

यष्टिं वर्षसहस्राणि स्वर्गे योदति भूमिदः।

आच्छेता चाऽनुमन्ता च तान्येव नरके वसेत्॥ इति॥

लिखितं च वक्रामात्यप्रनम्ना॥ भोगिकामात्यनरदत्तनम्ना भोगि-
करविदत्तपुत्रसूर्यदत्तेनेति। दूतको भाग्यहः।

TRANSLATION.

Glory to the great God!¶ Well be it!

In the year one hundred and fifty-six of the extinction* of the
sovereignty of the Gupta kings, in the year Mahāvais'ákha,† on the
third day of the light fortnight of the month Kártika, in the fore-

* The other grant combines this word euphonically with the foregoing.

† It is the mere rudiment of a superscribed circle which I here read into
an *anuswára*, in the original. In the other inscription even this is missing.

‡ Is there such a vocable? Perhaps अवधानेन is meant. I translate as if it
were. The second inscription has the same anomaly.

§ Both sets of plates have distinctly रक्ष्य, which here is nothing.

|| नम्ना, on the plate, by oversight. In the other grant is प्रनम्ना. Hence, by
abrasion, the Hindí पन्ती.

¶ S'iva, on presumption, not by proof.

* "Occupation," says Professor Wilson: an explication already discussed.
He adds: "भुक्ते or भुक्तौ; but it may also be read मुक्ते: or मुक्तौ, 'from the
end, or cessation.'" To this liberty of option Mr. Thomas emphatically
demurs; and with the strongest of reasons. Any the slightest conversancy with
Sanskrit palcoglyphs is incompatible with a decision so indulgent.

† It has not been ascertained what system of computation is here contem-
plated. Professor Wilson renders: "in the year (of the cycle) Vais'ákha."

noon of that *day* ;* by the great king, the auspicious Hastin, sprung from the house of the Parivrājaka princees,† great-grandson of the great king Devāhya, ‡ grandson of the great king Prabhanjana,§ and son of the great king Dāmodara ; giver of thousands of kine, of elephants and horses, of store of gold pieces, and of land ; diligent in homage to his spiritual guides and to his father and mother ; most devoted to the gods and to Brāhmins ; victorious in many hundreds of battles ; the delighter of his race ; with view to enhance his own worthiness, and that he might make himself to mount by the flights of steps celestial ; the village of Vasuntarashendika|| has been ceded, absolutely, to Gopaswāmin, Bhavaswāmin, Sandhyāputra, Divākara-datta, Bhāskaradatta, and Sūryadatta, Vājasaneyā-Mādhyandina Brahmins, of the stock of Kutsa.¶

For this he has no warrant. The prefix which I give is sufficiently clear on the plate.

* Here I follow Professor Wilson, who writes : “ in the fore-part of the day.”

दिवसपूर्वा is, however, illegitimate Sanskrit, in this sense.

[Since the receipt of this paper for publication, Mr. Hall has sent the following, which he desires to have here inserted : “The compound in the text is perfectly legitimate Sanskrit, but not a substantive, and having nothing to do with “forepart of the day,” or my ‘forenoon :’ for I here deferred to Professor Wilson unadvisedly. A re-perusal of the Eran inscriptions, as they actually read, has taught me how to unlock this quaint and antiquated expression. Understanding तिर्य्यङ्, I would construe, not over-literally, ‘on that, *i. e.*, the aforesaid, lunar day, and on the day of the week therewith coincident.’ Correct accordingly in Inscription II. as well.”—EDITORS.]

† “By the exalter of the family of the chief of the ascetics,” according to Professor Wilson. Partly from misreading the Sanskrit, this is unallowable. The Parivrājakas now come to light for the first time.

‡ Not “Dwarhya,”—Devārhya ?—as Professor Wilson wishes. In both inscriptions the name is most legibly incised ; and Mr. Thomas’s decipherments bear out my lection unhesitatingly.

It would be rash to speculate that there is a mistake for देवाक्य ‘named Deva.’

§ Seemingly, Prabhanjana. The second grant clears up all uncertainty.

|| By possibility, this name is Vansuntarashendika.

¶ कौत्स, past doubt, in the Sanskrit of both inscriptions. Mr. Thomas so understands, in the other ; कौसु, in this. Professor Wilson puts “of Kaus’ika ;” appending, as a foot-note : “The reading of one is ‘Kos’iya ;’ of the other

In all directions *this village has fosses of demarcation*. On the north side is the boundary of Mona and *that* of Púrvabhúkti.* To Sandhyáputra and the rest *the place is assigned*,† privileged from the ingress of fortune-tellers and soldiers, and *with right* to rid itself of robbers.

By virtue of these presents, impediments *to the franchises herein patented* are not to be opposed, even in after times, by those who arise in my family, or by those who are maintained by subsistence accruing from my shares.‡ Thus it is enacted. Let one do otherwise *than as I have decreed* and, though *my soul shall have transmigrated* into another body, I will, with intense vigilance, bring him to destruction.

‘Kaus’alya.’ Ought it to be Kas’yapa?” The sibilants are nowhere interchanged, in these instruments.

The names of only the first two of the donees enumerated above have place in Professor Wilson’s translation; and the village bestowed away is there represented by a blank. On what comes next, and down to the preceptive verses, he remarks, premising “with the boundaries (specified):” “then follow a number of unintelligible names of places, after which there is a prohibition to any of his successors to revoke the gift.”

* My decipherment and rendering, at this point, may be liable to amendment.

† On the import of two terms which here succeed, in the original, our dictionaries shed little light. With respect to the second I have ventured a guess, which I am unable to recall, in a paper not by me at this moment. The first may define the village under alienation, vertically to the mid-air.

There is something of experiment in the meanings attached to the remaining particulars of the paragraph. See the Journal of the American Oriental Society, Vol. VI., p. 541.

‡ This is obscure. The royal ‘fourths’ cannot be designated by these ‘shares.’ Only at calamitous conjunctures was twenty-five per cent. the price, accredited by the Laws of the Mánavaś, of the safe-guard exercised by Hindu kings.

It has, of course, occurred to me that पाद signifies ‘feet.’ ‘Subjects’ would then, be intended. But they would hardly be denoted by such a periphrasis as we here encounter. More than this, the idea involved savours unconventionally of haughtiness.

If I be not in fault, Hastin refers to the deductions from his revenues, appropriated for the sustenance of his relatives. As kindred of majesty, they must have had superior opportunities to oppress undetected. पाद means ‘portion’ generally, no less than ‘quarter.’

And it has been declared by the worshipful and preeminent sage, Vyása of the *Veda* :

Strenuously guard, O Yudhishthira, land presented aforetime to the twice-born: *for* more laudable is protection after *gift* than is donation, most excellent among rulers.

By numerous kings, *for instance*, Sagara and others, the earth has been enjoyed. To him of whomever, at any time, is a territory, appertains then the fruit of *merit attached to the bestowments of land made by his predecessors*.

For sixty thousand years the donor of land rejoices in paradise; *but* just as many does the disseizor, and *so* the abettor of *disseizin*, abide in a region of dolor.*

The end. And *this was* engrossed by Súryadatta, son of the financier† Ravidatta, grandson of the financier and minister Nara-datta, great-grandson of the minister Vakra. The commissioner *in the transaction was* Bhágraha.

INSCRIPTION, No. II.

नमो महादेवाय । स्वस्ति । त्रिषष्ट्युत्तरेऽव्यष्टे गुप्तनृपराज्यभुक्ते
महाश्वयुजसांवत्सरे‡ चैत्रमासे§ शुक्लपक्षद्वितीयायामस्यां दिवसपूर्-
वायां नृपतिपरिव्राजककुलोत्पन्नेन महाराजदेवाह्यप्रनम्रा महाराज-
श्रीप्रभञ्जननम्रा महाराजदामोदरसुतेन गोसहस्रहस्यश्वहिरण्या-
नेकभूमिप्रदेन गुरुपितृमातृपूजातत्परेणा॥ इत्यन्तदेवब्राह्मणभक्तेना-
ऽनेकसमरशतविजयिना स्ववंशामोदकरेण महाराजश्रीहस्तिना

* Professor Wilson's translation of these stanzas is not simply loose, but incorrect. Still, a minute critique on the subject may be dispensed with.

† So I apprehend, at a venture, what Professor Wilson esteems "the title or designation Bhogika." The name of Súryadatta's great-grandfather, Vakra, whom the Professor ignores, is bare of this qualification; and hence it cannot denominate his family.

Words contained in these inscriptions, hitherto uninserted in our lexicons, or of which, as I here understand them, supplementary acceptations are desiderated, are उद्रङ्ग, उपरिकर, चाट, दूतक, परिवेद, प्रनम्र, भोगिक, महोमत.

‡ Thus, and rightly, on the plate. See a note on the first inscription.

§ मासं, with the *anuswára* faintly traced, in the original.

॥ First, पूजनत—was engraved. A त was then interliterated, in lieu of the न, left unerased; but the vowel of ज was not lengthened, as it should have been.

स्वपुण्याप्यायनार्थमस्मिन्नामिपुत्रभारद्वाजसगोत्रवाजसनेयसब्रह्मचारि-
 ण्ये देवस्वामिने शर्वस्वामिने च गोरिस्वामिने वाजसनेयसब्रह्मचारिण्ये
 कौत्ससगोत्राय दिवाकरस्वामिने च स्वतिस्वामिने वाजसनेयसब्रह्म-
 चारिण्ये भार्गवसगोत्राय वरुणशर्मणे* बप्पस्वामिने वासुलसगोत्राय
 कठसब्रह्मचारिण्ये †कुमारदेव वाजसनेयसब्रह्मचारिण्ये‡ नमात-
 शर्मनागशर्मरुखरदेवकौद्रवदेवविष्णुदेवदेवनागकुमारसेनरुद्रशर्मदेव-
 दाङ्गरालम्बोष्ठदेदमितमहादेवगुणवक् § इत्येवमादिभ्यो ब्राह्मणेभ्यो
 ऽन्तरपट्टे कोर्परिकायाहारः सोद्रङ्गः सोपरिकरः अचाटभटप्रावेश्यो-
 ऽतिस्थः। तस्याघाटाः पूर्वण कोर्परगती उत्तरेण निमुक्तककोणकः
 वङ्गरग्रामस्य दक्षिणपार्श्वे बलकमध्ये॥ महकः अत्रतसन्तारकः पश्चि-
 मेन नागसरी। दक्षिणेन बलवर्मपरिच्छेदः। तदस्मत्कुलोत्थैर्मत्पादपि-
 ण्डोपजीविभिर्वा कालान्तरेष्वपि न व्याघातः कार्यः। एवमाज्ञप्तम्।
 योऽन्यथा कुर्यात् तमहं देहान्तरगतोऽपि महताऽवध्यानेन निर्दहे।
 उक्तं च भगवता परमर्षिणा वेदव्यासेन।

पूर्वदत्तां दिजातिभ्यो यन्नाद्रक्ष ॥ युधिष्ठिर ।
 महीं महीमतां श्रेष्ठ दानाच्छ्रेयोऽनुपालनम् ॥
 बज्जभिर्बसुधा भुक्ता राजभिः सगरादिभिः ।
 यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलम्**
 स्वदत्तां परदत्तां वा यो हरेत वसुन्धराम् ।
 स विषया कृमिर्भूत्वा पिष्टभिः सह पचते ॥
 षष्टिं†† वर्षसहस्राणि स्वर्गे मोदति भूमिदः ।
 आच्छेत्ता चाऽनुमन्ता च‡‡ तान्येव नरको वसेत्§§ ॥

* The vowel has been supplied.

† An intrusive रेव, after कुमारदेव, has been expunged.

‡ The engraver here forgot ऐ entirely.

§ Following कुमारसेन—is a small character resembling प. Probably it is superfluous. Yet Kumárasenapa may have been a name.

॥ The plate has मध्ये.

॥ य—, in the original.

** In the grant this verse runs :

सस्य यस्य यदा भूमिस्तस्य तदा फलम्

†† Parts of the letters in षष्टिं वर्ष—are lost, from corrosion of the plate.

‡‡ म in the original.

§§ The त was omitted by the artist.

लिखितं च वक्तामात्यघ्नम्* भोगिकनरदत्तनम् भोगिकरवि-
दत्तपुत्रेण महासान्धिविग्रहिकसूर्यदत्तेन। भाग्रहो दूतकः।

There is so much that is common between this inscription and the first, that it seems needless to translate it in full. I shall, therefore, restrict myself to a punctual specification of its variations from the other.

It is dated in the forenoon, on the second day of the moon's increase in Chaitra, in the year Mahás'wa-yuja,† one hundred and sixty-three years after the domination of the Guptas had been laid to rest. Prabhanjana has the epithet of 'auspicious.' The clause about the stairs to elysium is dropped. The donces are as follows: Agniswámiputra, a Vájasaneya catechumen, of the stock of Bharadvája; Devaswámin; S'arvaswámin; Goriswámin, a Vájasaneya catechumen, of the stock of Kutsa; Divákaraswámin; Swatiswámin, a Vájasaneya catechumen, of the stock of Bhṛigu; Varuṇas'arman; Bappaswámin, of the stock of Vasula,‡ a Kaṭha catechumen; Kumáradeva, a Vájasaneya catechumen; Namátas'arman; Nágas'arman; Rukharadeva; Kaudravadeva; Vishṇudeva; Devanága; Kumárasena; Rudras'arman; Devadánga; Rálamboshṭha; Dedamita; Mahádevagunvaka.§ These and other Bráhmans are collated, in perpetuity, to the benefice of Korparika, which, apparently, was situated in the heart of a village|| The estate thus assigned was bounded, on the east, by the ditch of Korpara; on the north, by Nimuktakakonaka, in the village of Vangara; on the south, by

* Here precede two characters. They may be a bungling repetition, abandoned unfinished, of नम् । A little forward are पुत्रेण, सूर्यदत्तेन, and भाग्रहो.

† "Ashwayuj (?)," writes Professor Wilson. To this grant, which he does not translate, he devotes a few notes, and nothing more. They have mostly been cited.

‡ This family has long passed away. It may be remembered in the larger Hindu genealogies: it is not in the smaller. For what may be the same name see Vol. XXIX. p. 18.

§ These persons, from Devadánga inclusive, bear very strange appellations, as best I can unlock them. I do not guarantee that they have been groped out infallibly. This remark also applies to some proper names just below.

|| Otherwise, "in Antarapaṭṭa?" Else, "in Antarapadda?"

Mavpika and Amvratasantáraka, in Valaka; and, on the west, by Nágasari. To the south lay the allotment* of Balavarman.

The three stanzas of the other grant are repeated in this; but, before the last of them, we have another: 'He who resumes land, given by himself, or given by another, transformed to a dung-worm, along with his progenitors, receives retribution.'

Súryadatta is now become 'great feccial.' He styles his grandfather 'financier,' and no longer 'minister.' Bhágraha, as seven years before, is the commissioner. His name here precedes his title, in the Sanskrit.

Each of the sets of plates as I have said already, is accompanied by a rude signet ring. 'Of the fortunate Hastin' is inscribed on one of the rings; and 'The fortunate King Hastin,' on the other.†

Saugor, December 22, 1860.

* I conjecture that some subdivision of land was, in old times, technically styled परिच्छेद.

† श्रीहस्तिनः and श्रीहस्तिराज. The latter should terminate in—राजः or—राजस्य. The genitive is preferable.

The following passage of an inscription was faultily printed at p. 18 of the last volume of our Journal. Nor is the interpretation of it there offered altogether free from inexactness. A re-translation is subjoined to the original.

सिद्धिः । संवत् १११५ वर्षे फाल्गुनवदि गुरौ ।
 मदपतितकपोलः कान्तदन्तः कपालस्
 तिमिततिमिरजालः सञ्चलत्कर्णतालः ।
 कुलिशकठिनगुण्डादण्डराजन् मनोवि-
 घ्नकदलनकरालः पातु वः शम्भुबालः ॥

'Auspiciousness! Year of Samvat, 1115: Thursday, the 8th day of the dark fortnight of Phálguna.

'May the sen of S'ambhu—with exudation fallen on his cheeks; of brilliant tusks; whose head impedes all darkness; waving his ears; adorned with a staff-like proboscis, hard as adamant; potential in removing mental obstructions—protect you.'

The metre is the *Málini*. There is a prosodial blemish in dividing the word at the conclusion of the third verse.



The Inscriptions of Erikaina, now Eran, re-deciphered and re-translated.—By FITZ-EDWARD HALL, Esq. D. C. L.

A paper on these interesting relics, including reduced copies of Captain Burt's facsimiles, with the decipherments and translations of the late Mr. James Prinsep, has already appeared in the pages of this Journal. It will be found in the seventh volume, that for 1838, pp. 631-635.

One of the inscriptions, the older, is engraved, in nine lines, on the western face of a large quadrilateral column, still erect and in good general preservation. It is twenty-nine inches in width, by a height of twenty. The other, which has an aspect eastward, spans the throat of a colossal image of a swine; not unnaturally mistaken, by the ignorant, for the similitude of a trunkless elephant. It speaks of the temple, of which the idol was aforetime the chief glory, or the reproach; an edifice now lying in littered dilapidation, its ruin being ascribed, in the oral traditions of the neighbourhood, to the great Muhammadan iconoclast of the twelfth century. This writing contains eight lines; and it measures, in height, about ten inches. The first line, considerably outrunning any of the rest, is a little within two and a half feet long. Captain Burt, in a volume I remember to have seen some years back, has, I believe, described the megalithic erections on which these records are incised. As a faithful account of them could hardly be missed of by a person of intelligence, and as, once given, it need not be repeated, I shall confine myself to the inscriptions.

Their contents are summarized, by Mr. Prinsep, in these words:

"The temple was built by Dhanyavishṇu, the confidential minister of Rájá Mátrivishṇu, the son of Harivishṇu, grandson of Varunavishṇu, and great grandson of Indravishṇu: in the first year of the reign of Rájá Tárapāni of Suráshṭra (?): and

"The pillar was erected by Vaidalavishṇu, the son of Harivishṇu also* grandson of Varunavishṇu, and at the cost of Dhanyavishṇu,

* This word should be expunged. "Hastirishṇu," a mere lapse of the pen, as is evident to any one who reads two pages on, I have exchanged for 'Hari-

on the fourteenth of As'hádha, in the year one hundred and sixty-five, in the reign of Budhagupta, in Suráshṭra, comprehending the country between a river whose name, though partially erased, may be easily made out as the Kálindi, or Jamna, and the Narmadá, or Nerbudda."

As the inscription relating to the temple was formerly interpreted, it dates during the reign of "Tárapáni," and yet "before his time." Still, as Mr. Thomas justly observes,—though not with reference to this incongruity,—Mr. Prinsep "was clearly disposed to infer that the temple was built prior to the erection of the pillar;"* and the supposition is borne out by the extract cited above. With several other of his positions, it must now give place to deductions built upon privileges of investigation which were denied to my predecessors. For instance, Dhanyavishṇu is not called "minister;" "Vaidalavishṇu" is the offspring of an erroneous reading, and so a present to history which may as well be returned; there is no mention of "Suráshṭra" in either inscription; and "Tárapáni" is undoubtedly a misdecipherment for 'Toramáṇa.' This last fact, if my memory does not fail me, was detected by Mr. Thomas. But what is by far most important of all, the date of the more ancient inscription† was unravelled amiss as to the numerical day of the

vishṇu.' The inadvertence escaped the editorial eye of Mr. Thomas. See his valuable publication entitled "Prinsep's Indian Antiquities," &c., Vol. I., p. 248.

* Ibid., Vol. I., p. 340.

† Since writing this paper, I have had time, before sending it to the press, to refer, for a solution of the date in question, to my friend Bápú Deva S'ástrin, Professor of Mathematics in the Benares College. He apprizes me, in reply, that it conforms to the era of Vikramáditya, and does not conform to that of S'áliváhana. It is, therefore, all but demonstrably certain that Budhagupta was reigning on Thursday, the seventh of June, in the year of our Lord one hundred and eight, new style. Toramáṇa must have flourished shortly after him; with something of likelihood, indeed, as his next successor. To Budhagupta's registration, relatively to the other Guptas, we have not the smallest trustworthy clue. As for chronologic adjustments grounded on comparison of the letters on old Hindu coins, they cannot, I maintain, be other than exceedingly insecure. In order to pronounce with assurance on the time of any of the Guptas but Budha, we must pause for fresh facts.

moon ; while the designation of the lunar fortnight to which that day is referred was passed by altogether. Counted from an unknown epoch, no Hindu date, unintegrated by the particularity at last amended, is available for eral determination. The omission to distinguish the demi-lunation would only add to the irksomeness of exploratory computation ; but any proecess of reckoning based on Mr. Prinsep's premises would, of neccessity, have a delusive issue, if any at all.

Had Mr. Prinsep inspected the documents in discussion with advantage of the facilities I have been able to command, it is beyond question that his conclusions respecting them would have differed, as on matters of moment, so as to points of unimportance, from those he has recorded. Writing under obligation of the reserve impressed by this consideration, I shall stay to expatiate on but a few of the discrepancies, touching secondary details, which, on collation of our results, the attentive reader will discover. At the same time, I have weighed these cases, one and all, with my best diligence. Standing before the originals, I compared my facsimiles, letter by letter, with those that have been lithographed ; and every the slightest dissimilarity of the copies was patiently tested by the perishing archetypes.

In fine, it is not undeserving of note that the inscriptions are, to a remarkable degree, clear from faults imputable to the artists who executed them.* The peculiarities presented in the Sanskrit will be specified in the appropriate place.

Experimentally, if the Udayagiri inscription be made out rightly as to its leading features, and if its year be counted from Vikramāditya, the Chandragupta which it is said to name must have borne sway about the middle of the first century before Christ. See Major Cunningham's *Bhilsa Topes*, p. 151 ; and this Journal, for 1858, p. 227.

* Subjoined are all the examples : पञ्चषष्ठ्यधिक ; वरणत्रिंशोः, in one inscription ; पुरोगाभ्यः, in both ; अग्निर्ण. The rectifications will be seen in the sequel. No account is here taken of the vowels which time has obliterated : but they are not numerous.

Consonants gratuitously doubled I have given single. Maittrāyaṇīya has, thus, been simplified to Maitrāyaṇīya. Coins are in existence which exhibit even Vikramāditya.

Ready intelligibility has, further, been consulted by acquiescing to the laxity of the inscriptionist where he neglects the canons which regulate the coalescence of consecutive vowels.

On the northern flank of the column, among several names, is that of Kailāsajas'ambhu, as best I can unlock it. If *sa'nka*, apparently the epithet attached to it, be indicative of his profession, and if it signify "stone-cutter," it may be that we know who wrought, mechanically, the adjacent lines promulgating the piety and the pride of King Mātrivishṇu and his brother.

INSCRIPTION I.

जयति विभुश्चतुर्भुजश्चतुर्ण्यवविपुलसलिलपर्यङ्कः ।
जगतः स्थित्युत्तिन्ययादिहेतुर्गरुडकेतुः * ॥

* The first five lines of this inscription as engraved have, each, one or more letters fretted away at the right-hand extremity. Many is the bucolic tool that has owed its edge to the royal column, debased, of later years, to the uses of a whetstone. The restorations of these abrasures are indicated by brackets, in what follows.

Line I.—स्थित्युत्तिन्य (यादि-)

„ II.—आषाढमासशु (क्ष-)

„ III.—महारु (द्र-)

„ IV.—क्रतुयाजि (ने)

„ V.—वरुणवि (व्योः)

The *न्य* of line I. is but very slightly damaged. A word thus beginning, and expressive of 'destruction,' is here wanted. Such a word was easy enough to find: and I have tacked to it a suppletive particle, quite in the Hindu taste, howsoever averse from our own. The metre is thus brought out identically the same as that at the commencement of the second inscription. Mr. Prinsep reads *चय*, in contradiction to the warrant of his facsimile, and at the cost of good prosody. It should be remarked that, in the antique character with which we are concerned, syllables rarely occupy a larger area, laterally, when containing, than when not containing written uninitial vowels; these, with the unique exception of the *u* as sometimes united with *r*, being, invariably, either superscript or subscript.

At the end of the second line Mr. Prinsep found in his facsimile, nothing but an upright stroke; and he has not surmised it to be part of any letter. But the stone has distinct traces of what can be only a *श*. To piece out *शुक्ल* from this is sufficiently obvious. At the opening of the third line, *द्वादश्या* is unmistakable, in every element of it; and there is no ground for Mr. Prinsep's comment, that "the word is written, corruptly, *tryordas'yām*, in the original." Most fortunately, peremptoriness of assertion in this behalf is practicable. There is question of the date, concerning which I have already spoken.

शते पञ्चषष्ठ्यधिके वर्षाणां भूपतौ च बुधगुप्ते आघाटमासशुक्लदा-
 दश्यां सुरगुरोर्दिवसे संसुरभु* कालिन्दीनर्मदयोर्मध्यं पालयति लोक-
 पालगुणैर्जगति महारुद्रश्रियमनुभवति सुरश्चिचन्द्रे च अस्यां संवत्स-
 रमासदिवसपूर्वायां स्वकर्माभिरतस्य क्रतुयाजिनो अधीतस्वाध्यायस्य
 विप्रर्षेर्मेत्रायणीयवृषभस्येन्द्रविष्णोः प्रपौत्रेण पितुर्गुणानुकारिणो वरु-
 णविष्णोः पौत्रेण पितरमनुजातस्य† स्ववंशवृद्धिहेतोर्हरिविष्णोः
 पुत्रेणाऽत्यन्तभगवद्भक्तेन विधातुरिच्छया स्वयंवरयेव‡ राजलक्ष्म्याऽ-
 धिगतेन चतुःसमुद्रपर्यन्तप्रथितयशसा अक्षीणमानधनेनाऽनेकशत्रु-
 समरजिष्णुना महाराजमातृविष्णुना तस्यैवाऽनुजेन तदनुविधायिनाऽ
 तत्प्रसादपरिगृहीतेन धन्यविष्णुना च मातृपित्रोः पुण्याप्यायनार्थमेव
 भगवतः पुण्यजनार्दनस्य जनार्दनस्य ध्वजस्तम्भोऽभ्युच्छ्रितः ।

स्वस्यस्तु गोब्राह्मणपुरोगेभ्यः सर्वप्रजाभ्य इति ।

Of the next supplial I have little more to say than that my guess, on which I do not in the least conceit myself, is the best I can now wait to offer. How ill it assorts with the demands of the context has not passed unnoticed. Mean-
 time, the passage in which it occurs is one of very immaterial significance. The
 reduced facsimile of Mr. Prinsep, like the original, has an explicit रु before my
 speculative द्र; and, nevertheless, he reads ह्र. In what immediately succeeds
 he is utterly at fault.

For the supplementations to the fourth and fifth lines recourse has been had
 to the other inscription.

* This, I take it, is the word in which Mr. Prinsep thinks he sees "Su-
 rāshtras."

† More than once have I met with this hoary solecism in Sanskrit books; but
 where, recollection does not serve me to indicate.

‡ In consequence of misreading this word, Mr. Prinsep espied something
 about a "regency."

§ All along here Mr. Prinsep is quite abroad. He creates a "Vaidalavishṇu;"
 my 'victorious, in many a battle, over his enemies' is transformed, by him, into
 "Indravishṇu;" and Mātrivishṇu is represented as being tautologically called
 his great-grandson, and yet does not show himself thus in the English version.
 The other inscription should have dissuaded from this.

TRANSLATION.

Triumphant is the four-armed *divinity*: omnipresent; of whom the broad waters of the four seas are the couch; cause of the continuance, origin, destruction, and the like, of the universe; whose ensign is Garuḍa.

In the year one hundred and sixty-five, on the twelfth *day* of the light fortnight of the month A'shādha, on the day of the Preceptor of the gods;* and when Budhagupta—ruling, with the genius of the regents of the quarters, over the interval, chosen land of the gods, between the Kálinḍī and the Narmadā; possessing, throughout the world, the lustre of the mighty Rudra; a moon of excellent rays—was king: on that *lunar day* specified with the year, month, and week-day *aforesaid*;† by the great-grandson of Indravishṇu,—a Bráhmaṇ saint, of the illustrious Maitráyaṇīya monarchs,‡ who took delight in his duties, celebrated solemn sacrifices, and was well-read in the scriptures;—grandson of Varuṇavishṇu, who imitated the excellencies of his father;—son of Harivishṇu, who was the counterpart of his sire, and derived prosperity to his race;—the great king, Máṭṛivishṇu, a most devout worshipper of Bhagavat; who, by the will of the Ordainer,§ acquired, like as a maiden *sometimes* elects her husband, the splendour of royalty; of fame recognized as far as the four oceans; of unimpaired wealth; victorious, in many a battle, over his enemies;—and also by his younger brother, Dhanyavishṇu, who does him obeisance, and is revered because of his favour;—with purpose to advance the merit of their mother and father, this memorial monument to the divine Janárdana,|| slayer of the demons, was erected.

* Or Brihaspati. The day is Thursday.

† This superannuated style of formula, characterizes the second inscription also. For a note on it see *supra*, foot-note.

‡ Not, as Mr. Prinsep has it, “the Maitráyaṇáyakṛipabha race. In both records alike the original is indubitable. This dynasty is likened to a constellation. At least, I can suggest no other explanation of the adjunctive *prabha*. ‘Illustrious’ may be esteemed to convey the intended comparison with requisite fidelity.

§ Vidhātṛi; i. e., Brahmá.

|| Vishṇu, the predilective deity of the Maitráyaṇīya princes, as is patent throughout these publications.

May happiness attend the kine, the Bráhmans, the magnates, and all the subjects. The end.

INSCRIPTION II.

जयति धरण्युद्धरणो घनघोणाघातघूर्णितमहोदधः ।

देवो वराहमूर्तिस्त्रैलोक्यमहागृहस्तम्भः ॥

वर्षे प्रथमे पृथिवीं पृथुकीर्तौ पृथुद्युतौ महाराजाधिराजश्रीतोऽरमाणे
प्रशासति फाल्गुनदिवसे दशमे इत्येवं राज्यवर्षमासदिनैः एतस्यां
पूर्वयामे* खलक्षणे रक्तपूर्वायां† खकर्माभिरतस्य क्रतुयाजिनोऽधीत-
स्वाध्यायस्य विप्रर्षेर्मेत्रायणीयवृषभस्येन्द्रविष्णोः प्रपौत्रस्य पितुर्गुणानु-
कारिणो वरुणविष्णोः पौत्रस्य पितरमनुजातस्य स्ववंशवृद्धिहेतोर्ह-
रिविष्णोः पुत्रस्याऽत्यन्तभगवद्भक्तस्य विधातुरिच्छया स्वयंवरयेव
राजलक्ष्म्याऽधिगतस्य चतुःसमुद्रपर्यन्तप्रथितयशसः अक्षोणमानधन-
स्याऽनेकशत्रुसमरजिष्णोः महाराजमातृविष्णोः स्वर्गतस्य भ्रात्राऽनु-
जेन तदनुविधायिना तत्प्रसादपरिगृहीतेन धन्यविष्णुना तेनैव‡
महाविभक्तपुण्यक्षितयेण मातृपित्रोः पुण्याप्यायनार्थमेव भगवतो वरा-
हमूर्तेर्जगत्परायणस्य नारायणस्याऽशीर्षः प्रासादः स्वविषयेऽस्मिन्ने-
रिकैणे कारितः ।

सख्यस्तु गोब्राह्मणपुरोगेभ्यः सर्वप्रजाभ्य इति ।

* On the stone there is an erasure where I propose मे until ingenuity shall improve on it.

The lithograph has पूर्व, and, a little before, राच्चे, to neither of which does the stone lend support.† The former decipherment is, hereabout, very precipitate.

† Mr. Prinsep shuts his eye to the long vowel of लक्षणे in his facsimile: and for his रक्त I by much prefer रक्त; though this too may possibly be bettered.

‡ A vertical fissure traversing the front of the idol here first lays one under real difficulties. Higher up it has carried away half of the घ in the epithet अक्षोणमानधन. The letters completely destroyed, beginning with that in the sixth line, fill the room of those which are bracketed as below.

TRANSLATION.

Triumphant is the god who, in the likeness of a boar, lifted up the earth; who, by blows of his hard snout, tossed the mountains aloft; the *upholding* pillar of that vast mansion, the threefold world.

In the first year that the auspicious Toramāna, sovereign of great kings, of extended fame and wide-spread effulgence, is governing the earth; on the tenth day of Phālguna; even so, in the year and month and on the day of his reign before mentioned, during the first watch of the said *lunar day* as circumstantiated: of the great-grandson of Indravishṇu,—a Brāhman saint, of the illustrious Maitráyaṇīya monarchs, who took delight in his duties, celebrated solemn sacrifices, and was well-read in the scriptures; grandson of Varuṇavishṇu, who imitated the excellencies of his father;—son of Harivishṇu, who was the counterpart of his sire, and derived prosperity to his race;—*that is to say*, of the great king Mátrivishṇu, who has departed to elysium,—a most devout worshipper of Bhagavat; who, by the will of the Ordainer, acquired, like as a maiden *sometimes* elects her husband, the splendour of royalty; of fame recognized as far as the four oceans; of unimperfect wealth; victorious, in many a battle, over his enemies,—the younger brother, Dhanyavishṇu,—who did him *due* obeisance, and was revered because of his favour; whose

Line VI.—तेनैव (म) ह।

„ VII.—प्रा (सादः)

„ VIII.—सर्वप्रजा (भ्य इ) ति.

With regard to the म which is purely conjectural, it was prompted by the succeeding letter, which, however, looks only very dimly like ह. Whatever it may be, the appendant vowel is liable to no doubt. Mr. Prinsep at this place declined to extract any thing whatever from his facsimile. The only sense educible from my reading is most suspiciously far-fetched.

In the seventh line, the letter which is assumed to be स is broken off at the left; and of its vowel there is no vestige. Here, and in what follows, Mr. Prinsep appears to have hit the probable substitute for a fraction and a flaw. A word for ‘temple,’ as one cannot but see at a glance, is precisely what is desiderated.

About the symbols missing in the eighth line there can be no diversity of opinion. The valedictory blessing is the same, to a letter, in both the inscriptions; and, in the matter of legibility, it is everything that could be desired.

righteous deeds have been notably unintermitted ;—with purpose to advance the merit of his mother and father, in his dominions, in this town of Erikaiṇa, has caused this substantial temple of the adorable Nárāyaṇa, in form a boar, *affectionately* attached to the world, to be constructed.

May happiness attend the kine, the Bráhmans, the magnates, and all the subjects. The end.

Camp Eran, Saugor District, December, 31, 1860.

On the Sub-Himalayan rocks between the Ganges and the Jumna.—

By HENRY B. MEDLICOTT, A. B., F. G. S., Professor of Geology, Thomason College, Roorkee.

(ABSTRACT.)

Pointing out briefly how, from the abundance of the fossil evidence, the Siwalik strata had at once taken their position in the acknowledged series of rock-formations, while very little indeed was known of their physical structure ; and, how at the same time other groups of Indian rocks, whose stratigraphical relations were well known, had not as yet been accurately placed in the general succession, owing to the absence of such fossil evidence, Mr. Medlicott stated that his own attention had been specially directed to investigating the physical structure of the district referred to ; not to the collection of fossils.

The rocks included are the Siwalik and the Nummulitic groups, and a series of schistose rocks, older than both these and lying to the north of them. The present notice was principally concerned with the newer groups, (the Upper Nummulitic and the Siwaliks,) the separation of which from the lower and more indurated underlying strata is generally well defined.

Up to the present time, our knowledge of these groups was as follows. The most connected sketch hitherto given is by Capt. R. Strachey, (Quar. Jour. Geol. Soc. London, Vol. VII. p. 292, 1851). This paper chiefly related to the rocks of the higher ridges and of Thibet, but the author refers also to the fossiliferous rocks at foot of the range. The section, given by Capt. Strachey, passing through Nainee Tal,

shews but a very bad development of the Siwalik rocks, and he could nowhere, "find or hear of any fossil remains among them." He assumes them, however, to be the representatives of the rocks near Dehra. He then proceeds to notice a series of sandstones, with occasional small seams of lignite, and imperfect vegetable impressions, and with beds of marl, and occasionally salt-springs, which form the northern boundaries of the longitudinal valleys, or Dúns, the connection of which with the outer Siwaliks he could not trace, but conjectured that there must be great faults. Suggestions were thrown out, that these might be of the European Saliferous age, or possibly the extension of the strata containing rock salt which are found further to the west in the Salt range and in the hill district of Mundee. It was also suggested, as possible, that they might have some connexion with the fossiliferous beds near Subathoo. In 1853, a brief notice of the rocks about Subathoo, by Major Vicary appeared, (*Quar. Journ. Geol. Soc. London*, Vol. IX. p. 70). In this paper, the author noticed the true Siwalik rocks, south of the Pinjore-dun, and also, a sandstone not unlike that of the Siwaliks, in the north of the dun in which he had sought for fossils in vain. The connection of this with the outer Siwaliks is concealed. North of this we meet with confused strata of variegated shales, also unfossiliferous. On the ridge of Kussowlie, and beyond it to Subathoo, the fossiliferous rocks of the Nummulitic period shew, associated with variegated rocks, &c. These are made subjacent to the fossiliferous strata. All these groups, Major Vicary separates from the Simla series, by a great fault. Regarding the age of these older and inner rocks, neither Major Vicary nor Capt. Strachey offer any conjecture.

In M. D'Archiac's valuable treatise on the Nummulitic fossils of India, Major Vicary's section is copied and he is quoted as the authority for other statements. In these, there is an important discrepancy or error, which must be noticed. M. D'Archiac speaks, in the most unequivocal manner, (pp. 175-6) of mammaliferous strata, representatives of the Siwalik formation, about Subathoo—and there overlying the Nummulitic rocks. Inasmuch as Mr. Medlicott's own researches had pointed out that the strict limitation of those fossils to the "Siwalik hills" is one of the most interesting facts in the geology of the district, he devoted repeated examination and enquiry on

the spot to investigating these statements, but he could find no trace of such fossils; nor could he reconcile M. D'Archiac's statements with Major Vicary's published account. Possibly the explanation of the difference is this. Major Vicary does mention fossil bones at and near to Subathoo, he says, "Saurian remains are, however, plentiful; I am not so sure with respect to mammalian remains, but, as the specimens are in good hands, I hope soon to settle that point." These remains, however, he in every case describes as occurring in blue or red shales alternating with or underlying Nummulitic strata. Without in the least questioning Professor Owen's skill in identifying genera from obscure remains, Mr. Medlicott was forced to think Major Vicary far too experienced and too intelligent a collector, to have failed in recognizing as mammalian such abundant remains as are mentioned by M. D'Archiac—"Elephas, equus, bos, cervus, &c., des debris de dent d'un elephant mastodontoide," and other similar statements. A clue to the explanation is to be found in M. D'Archiac's own words—that the sands, gravels and conglomerates with bones of large mammalia rest quite conformably on the Nummulitic beds near Subathoo, (p. 176). Now there is not even an allusion to such rocks by Major Vicary; on the contrary he says, "The blue shale, on which the quarter-guard of Subathoo stands, contains fossil bones in abundance," and so in other cases. In truth, there are no such rocks at Subathoo, as those spoken of by M. D'Archiac. Such rocks are unquestionably the common habitat of Siwalik fossils, and it is not improbable that, in consequence of original deficient labelling of specimens and possibly of subsequent intermingling, or, in consequence of a misunderstanding of written or verbal communications, some true Siwalik fossils were mistaken as coming from near Subathoo.

Mr. Medlicott's own researches, extending over a direct distance of more than two hundred and fifty miles, from the parallel of Nainee Tal to beyond the Sutlej, led him to expand considerably the series of rocks which were known to occur within these limits. This, for the present, could be most conveniently done under the two groups already known, viz. the Nummulitic and the Siwalik. Of these groups, the latter is continuous beyond the limits of the area examined; the former are much more irregular. The upper Nummulitic group

does not even reach the Jumna, on the east ; while on the west also, its continuity is interrupted, though not permanently.

Thus the connection suggested in Capt. Strachey's paper and map between the lignite sandstone, N. of the Kotah Dún, and the fossiliferous sandstone of Subathoo, is not established. The Kotah Dún rocks really correspond to the Siwalik-like sandstone, N. of Pinjore Dún, in Major Vicary's section.*

Between the two groups, the most decided physical separation exists, a fault of enormous throw, amounting to the entire thickness of the two series, cutting off the Siwalik group from all to the north of it. To the east of the river Jumna, this great fault runs at a variable elevation along the flank of the hills lying to the north of the Dúns ; the rocks, in junction on the north, being the limestones, slates, and grits of the lower Nummulitics and of the undetermined subjacent rocks—the Masuri or Nainee Tal series) : while to the west of the Jumna, the rocks in junction are generally these same schistose rocks, but often, especially at higher levels, the upper Nummulitic series.

North of this fault, there is no so decided a boundary ; the junction of the upper Nummulitic series with the slaty series, lying to the north of it, is not (though so represented) a great fault. There is, undoubtedly, considerable local faulting ; but, generally, the junction appears to be the original contact of deposition between unconformable strata. The upper Nummulitics in fact, seem to rest upon a ledge of the slaty rocks, upon a denuded surface of which they had been deposited.

There is a most marked geological separation to be made in the series spoken of as Nummulitic, upper and lower. Of the lower group, the best and least disturbed section is at the Król mountain on the new road to Simla. At this locality there is a well defined series (from 500 to 800 feet) of hard limestones with variegated slaty shales and grits, which may be called the Król group. It rests, unconformably, upon a great thickness of very thin bedded slaty shales and gritty flags, often highly carbonaceous and black ; which may or may not prove to be a member of the lower Nummulitic series.

* All are confounded under one colour in Mr. Greenough's map.

The upper sub-division of the Nummulitics is best seen near Subathoo, and gives three sub-groups in descending order—

1st.—Sandy—hard sandstones largely predominate; well exposed in Kussofli hill. In this group (at Kussofli and elsewhere) some well-preserved leaves and stems of trees, and other remains of terrestrial vegetation have been found.

2nd.—Sandy-argillaceous—lumpy sandy red clays. These are characteristically seen in flanks of Dugshai hill.

3rd.—Calcareo-argillaceous—well seen near Subathoo. These are all connected by conformity in stratification, and by transition in mineral character, and form one continuous sequence. They may be called the *Subathoo group*.

In rocks so contorted it is difficult to estimate thickness, but 1800 to 2000 feet may be given as the minimum.

All fossils hitherto procured, have been from the lower half of this series, as seen near Subathoo.

The beds of this upper or Subathoo group are often found folded into the contortions of the Król group and the subjacent slates—(Król and Bój mountains, &c.)

This Subathoo group is entirely distinct, as shewn, from the band of limestones and slaty clays long known to extend along the Southern border of the Western Himalyas. It does not appear to extend to the East of the Jumna: at least no trace of it is seen between the Jumna and Nainee Tal.

The separation we have made here from stratigraphical considerations was in a manner anticipated by D'Archiac from a consideration of the fossil evidence alone; at least he pointed out the entire distinctness of the organic remains of Subathoo as compared with those of the Punjab, of Scinde, of Beloochistan, and of Cutch (p. 175). But in the concluding section of this description (p. 179) where reasoning on the very uncertain observations of others, he is far from correct in stating that no appreciable unconformity could be observed between the two, or indeed between the Nummulitic strata generally and the overlying Siwalik series.

The evidence for supposing the Król group, as given above, to be also of Nummulitic age, is not perfectly conclusive. Mr. A. Schlagintweit has announced the discovery of Foraminifera in the neighbour-

hood of Nainee Tal, "identical with those which accompany the Eocene Nummulitic formation," and those rocks at Nainee Tal are considered by Mr. Medlicott, to be the true representatives of the Król beds ; but independently of this, the conclusion was arrived at from observations in the salt range, and in the Himalyas of Huzara and Poonch.

There is a great similarity in the section about Murree and north of Kotlee in the Kashmir territory, to that at Subathoo. Three or four miles north of Kotlee there is a stony rib of hard limestone, with an E. S. E. direction ; on both sides of this are brown clays and lumpy earthy limestone of the same character as the Subathoo rocks, succeeded by a great thickness of red clays and hard limestones : in fact, the series called above the upper Nummulitic. These rocks are noticed by Mr. Schlagintweit, "to the south of Kashmir a zone of Nummulitic marls and of sandstones, of thirty-nine to fifty miles broad, borders the Himalaya towards the plains of India."* The relations of this series to the massive limestone ridge are precisely the same as with the Król limestone ; the ridge at Dundee being altogether analogous to the rib thrust through the Nummulitic strata at Dihur on the Sulej : the resemblance lithologically is also perfect. Again, Murree stands on a mountain of red clays and sandstones ; the Moochipora ridge to the N. and N. W. of it is of the hard limestone, and along the junction Nummulitic rocks, identical with those at Subathoo, are easily traceable, although not well developed. In this hard sub-crystalline, and generally unfossiliferous limestone of the Moochipora ridge, Nummulites have been found, as already noticed by Dr. Fleming, (Quar. Journ. Geol. Soc. London, 1853, p. 200). On passing to the salt range, this Subathoo series was found to be entirely wanting, although so largely developed to the north. In the salt range, the thick soft sandstones and variegated clays of the Siwalik formation rest directly on the clear Nummulitic limestones, as noticed by Dr. Fleming ;† the very junction layers containing only rolled Nummulites. But there is nothing, at least in the east of the range, to *represent the Subathoo group*. There is nothing either to suggest the idea that these can be assimilated to the salt range Nummulitic rocks ; on the contrary all

* Report No. 2, 1856, J. A. S. B. Vol. XXV. p. 118.

† Journ. As. Soc. Bengal, Vol. XXII. p. 229, &c.

stratigraphical and mineral affinities of the Subathoo group are with the Siwalik type rather than with that of the Salt-range Nummulitic strata. These latter appeared to be more probably the representatives of the great limestone deposits which were found all along unconformably subjacent to the Subathoo group. These on the main range of hills have been more developed than on the salt range: they have also been much more indurated, and very much more disturbed, but are supposed to be one and the same.

While, therefore, in deference to its fossils, the Subathoo group has been classed as upper Nummulitic, it must be remembered that considered stratigraphically, it should be considered as the commencement of the Siwalik conditions of deposition.

The northern extension in the outer Himalyas of this lower Nummulitic series, the Król group and the subjacent slaty schists, has not been as yet worked out. The section through Simla to Kotgurh (forty miles N. E. of the Król) presents no contrasting junctions like those already described in the outermost zone: there are several lines of special crushing and contortion, but they do not introduce new rocks. The degree of disturbance is not on the whole increased, and the increase of metamorphism is very gradual and strangely capricious. Thus at Simla highly schistose rocks overlie smooth slaty grits. Indeed, it seems highly probable that the rocks of this section will be identified with, or found closely connected with, the Król series. Simla stands on the northern rise of a great synclinal bend, of which the Tara-Devi hill is the southern rise; at Jatog, the western spur of the Simla ridge, there are some hard cherty limestones that may well be the Król limestone; the thin-bedded slaty grits in the glen below Simla are very similar to the series subjacent to the Król group; among all these are frequent re-appearances of the carbonaceous (graphitic) ingredient that is so well developed on the S. W. base of the Król hill.

Besides their greater induration, these lower Nummulitic rocks differ from the Subathoo group in the presence of trap rocks. Towards the east these are very abundant, west of the Jumna, trap rocks are scarce.

Siwaliks.—Little has been added to our knowledge of these rocks since Capt. (now Col. Sir Proby) Cautley described them in 1836.

(Trans. Geol. Soc. London, Vol. V. p. 267.) Indeed even the suggestions thrown out by him have not been followed up further. He pointed out that the connection between the subordinate range and the higher hills could be traced in the Nahun district, where the two were continuous without any intervening Dún, yet none of the many subsequent fossil-seekers seem to have adopted the hint.

Capt. Cautley roughly divided the whole series into three groups without defining the extent of each; the lowest, coarse clays containing reptilian and mammalian remains. 2nd, blue marl with freshwater shells, and 3rd, sandstones and conglomerates, which were the chief source of the larger mammalian remains. The true value, or even the correctness of these sub-divisions Mr. Medlicott was not prepared to establish, but several facts point to a much wider difference between the groups than Cautley supposed. Considerable faulting exists, and the rocks brought into junction by these faults, suggest some new facts. In the valley north of Nahun, thick soft grey lignite sandstones with subordinate beds of lumpy, gritty red clay are, by the great fault already noticed, brought into contact with a crushed rock of the Subathoo Nummulitic strata, and of the infra-Król shales. South of Nahun, where the Markunda extricates itself from the higher hills, the lower beds of the same series, in which clay predominates, are in junction, along a fault, with thick shingle beds of the outer Siwaliks, the topmost beds of the whole series, and in which the lower hills commence.* The Nahun rock is continuous along the hills bounding the north side of the Dún both to east and west. It is the lignite sandstone, the same as that noticed by Capt. Strachey as occurring below Nainee Tal, (from this, the Dechouree iron-works now derive their ore) and it is also the Siwalik-like sandstone noted by Major Vicary, north of the Pinjore Dún. Capt. Cautley always considered these Nahun rocks as belonging to the Siwalik formation, but it does not appear that he identified them with the sandstones north of the Dún.

* This fault, with the same rocks in contact, is easily followed through these hills intervening between the Kiarda and Pinjore Dúns for some forty miles: it can sometimes even be seen in the Dúns close to the base of the hills on the north.

The continuity of this fault renders it probable that its throw is very considerable. To attain anything like an exact estimate of this, the position of the Nahun beds in the general series must be ascertained. This is by no means an easy question. And though not prepared to settle the point definitely, it may be useful to show how the matter stands.

Capt. Cautley referred the Nahun rocks to the *lowest* member of his threefold division of the Siwaliks (see above). Now large mammalian remains are found in the earthy sand and boulder beds immediately to the south of the fault, thus the top and the bottom beds of the entire series so far as we know them, are here brought into contact. But, further, the boulders in this outer rock, at the junction, are boulders of the lignite sandstone of Nahun hill; there is no other rock in section to the north that could have yielded them. And this fact would seem to involve either a want of strict correspondence between the Nahun hill beds, and any others in the section to south of them, or else, a total break of conformable sequence in that section. A much more careful examination of fossils and of the strata, than a preliminary survey would warrant, will be required to decide this.

This raises a question as to the successive deposition, and upheaval of great banks of these Siwalik strata, which again recurs in the west. It has long been noticed, that there was a great expansion of the Siwalik area in the west, commencing just beyond Kalka and Kasowli. It is occasioned by a curve in the great boundary fault, which here alters its direction to about 15° W. of N.; while the outer line of the Siwalik hills preserves nearly its former direction. In Mr. Greenough's map the sharpness of change in the boundary about Belaspur is exaggerated both by inaccuracies in position of localities and because he includes the Subathoo, or upper Nummulitic group, the inner or northern boundary of which is much more irregular than the main fault which separates this group from the Siwalik series.

Now the Siwalik rocks occupy this increased area, not by the extension of the strata already noticed, but by the successive introduction, by faults, of other bands of rock not strictly identifiable with the outer Siwaliks. Even at the Sutlej there are two such bands between the Nahun ridge and the main fault, as seen near Belaspur.

It is not intended to state that our knowledge of the existence and distribution of fossils in these rocks is conclusive; but, so far as known, with the single exception of the discovery by Lt. (now Col.) Durand of fossils near Nahun, there is *no known instance of fossils being found out of the first zone of these rocks—the Siwaliks proper.*

If we attempt to base our inferences upon lithological grounds from the composition and texture of the strata, in a continuous section like this, we must include the upper Nummulitic group, for, as already stated, it has, in these respects, very marked affinities with the Siwalik series. Many of the lumpy red clays of the Dugshai group, are not distinguishable in composition or in hardness from the clays of the upper Siwaliks: the sandstones, also of the same group are markedly of the same general type. Each of these bands then has affinities with the one on either side of it, and at the same time has irreconcilable contrasts also. The Belaspur conglomerates overlie, with, at least, general conformity thick red clays, and hard sandstones, exactly like the Dugshai group, yet without any intervening beds to represent the Kussowli group: and these conglomerates undoubtedly contain debris of the Nummulitic series. The rocks south of the Gumber fault are very similar to the Belaspur band, and the bottom strata are of an intermediate type between the Dugshai, and the lower Siwalik strata, being in fact with difficulty distinguishable from the rocks of the Nahun range, with which they are in contact. And lastly we have the Nahun rocks which are lithologically undistinguishable from the lower strata of the Siwalik hills, while the upper strata of these same hills contain boulders of these Nahun rocks.

All these facts seem compatible only with a long continued, and generally cotemporaneous process of upheaval, denudation, and deposition, under conditions commencing with the upper Nummulitic rocks. This conclusion is entirely at variance with the premature generalization at which Mr. D'Archiac arrived.*

In conclusion, the importance of carefully labelling fossils and distinguishing their localities cannot be too strongly insisted on.

* P. 176, D'accord avec tous les voyageurs qui ont parcouru le pays, Sir R. Murchison pense qu' un seul soulèvement brusque, sur une immense échelle, a relevé à la fois tous les dépôts tertiaires, inférieurs, moyens et supérieurs."

Meteorological Register kept on Ross Island, December, 1859,

Lat. 11-41 N. Long. 92-39 E.

Height above the Sea, 160 feet.

	At Sunrise.			At 10 A. M.			At 4 P. M.			At Sunset.			Highest observed Temperature.	Rain gauge above sea level 150 feet.	
	Aneroid.	Temperature.	Direction of Wind.	Aneroid.	Temperature.	Direction of Wind.	Aneroid.	Temperature.	Direction of Wind.	Aneroid.	Temperature.	Direction of Wind.			
1	29.73	70	N.	29.75	77	N.	29.39	76	N.	29.24	76	N.	78		Strong gales all day from North increasing in intensity until about 6 P. M. calm from 7 to 8, then a hard gale from the South west for two hours.
2	72	77.5	S.	79	77.5	S.	74	78.5	S.	77	76.5	S.	79	Gauge blown over.	
3	76	78	S. E.	84	81	S. E.	78	82	...	80	81.5	...	82		
4	81	80	...	88	80.5	S.	80	81	...	82	80.5	...	82		
5	85	76	...	95	81	...	82	80	...	84	80	...	82		
6	86	76	...	96	80	...	86	81.5	...	88	80	...	82		
7	92	77	...	97	80	...	89	81	...	90	80	...	84		
8	90	76	...	95	80	...	86	81	...	87	81	...	82		
9	89	77	...	97	81	...	86	83	...	87	82	...	84		
10	89	77	...	96	79.5	...	87	80	...	88	81.5	...	83		
11	91	80	...	99	83	...	93	82	...	94	83	...	83		
12	96	80	...	30.02	82.5	...	93	81	...	88	82	...	82.5		
13	93	78	...	00	82.5	...	87	82	...	88	82	...	82.5		
14	91	78	...	29.99	82	...	90	80.5	N. E.	91	81	...	83		
15	94	80	...	30.03	83.5	N. E.	93	80.5	...	93	81	...	81.5		
16	94	80	...	02	82.5	...	92	81	...	89	80	...	82.5		
17	99	80	...	04	81	...	92	81	...	87	80	...	82		
18	96	80	...	03	82	...	88	80	...	87	80	...	82		
19	92	76.5	...	00	82	...	86	81	...	87	80	...	82		
20	87	75	...	29.98	81	...	86	80.5	...	87	80	...	81.5		
21	86	78	...	96	81.5	...	90	81	...	91	80	...	83		
22	86	77.5	...	91	81	...	90	81.5	...	91	81	...	83		
23	90	79	...	98	81.5	...	92	81	...	93	80	...	82		
24	94	79	...	30.02	82.5	...	92	81	...	90	80	...	81		
25	95	80	...	06	81.5	...	89	80.5	...	91	80	...	81		
26	97	80	...	29.96	80	...	85	81.5	...	86	81	...	82		
27	86	79	...	95	80	...	80	81.5	...	81	80	...	82		
28	86	79	...	90	80	...	81	81	...	82	80	...	81		
29	82	76	...	92	79	...	85	81.5	...	86	81	...	82		
30	84	78	...	91	80	...	80	79.5	...	81	79	...	80		
31	81	79	...	91	80	...	83	81.5	...	85	81	...	82		

Reading of the Aneroid during Cyclone of the 1st.

1 P. M.	29.59
2 1/2	52
3 1/2	46
4 1/2	38
5 1/2	33

The house was partially nroofed at this time and the observations ceased.

JANUARY, 1860.

At Sunrise.			10 A. M.			4 P. M.			Sunset.		Rain.	Highest Temperature observed.	Remarks.
Aneroid to the 21 & afterwards mercurial Barometer uncorrected.	Temperature.	Wind.	Pressure.	Temperature.	Wind.	Pressure.	Temperature.	Wind.	Pressure.	Temperature.			
1 29,80	80	N. E.	29,88	82	N. E.	29,78	81	N. E.	29,80	80		82,5	
2 76	78	...	84	80	...	73	80	...	74	80		82	
3 80	80,5	...	84	82	...	73	81	...	74	80		82	
4 70	79	...	80	79	...	72	78	...	75	78		79	
5 75	77,5	...	84	78	...	72	76	...	72	77		79	
6 80	75	...	83	76,5	...	78	77	...	79	77,5		80	
7 83	75	...	88	77	...	83	80	...	84	79		80	
8 87	76	...	92	78	...	84	80	...	85	79		80	
9 86	76	...	95	79,5	...	84	81	...	85	80		82	
10 86	75	...	92	78	...	85	81,5	...	86	80,5		82	
11 85	75	...	92	78	...	85	81,5	...	85	81		82	
12 88	77,5	...	30,00	81	...	94	82,5	...	94	81,5		83	
13 93	76,5	...	01	79	...	94	78	...	95	77,5		80	
14 95	78	E. by S.	03	79	E. by S.	93		E. by S.					
15 96	79	N. E.	02	82	N. E.	91	81,5	N. E.	92	81		82	
16 94	79	...	03	81	...	91	81	...	92	80,5		82	
17 95	79	...	05	81,5	...	91	81,5	...	92	81		82	
18 88	75	...	29,98	78	...	86	79	...	87	78		79	
19 88	71	...	95	75	...	88	78	...				78	
20 89	74	...	97	76	...			N. by E.					
21 93,4	71,5	...			...	862	82	N. E.		81		82,5	
22 91,0	74	...	984	77,5	...	850	82	...	860	81		82,5	
23 880	76	...	988	77,5	...	884	81,5	...				81	
24 915	75	...	950	78,5	...	850	80,5	...				81	
25 914	75	...	986	77,5	...	894	80	...	906	79		81	
26 900	76	...	986	77,5	...	898	81	...	896	80		81,5	
27 900	76	...	975	78	...	898	82	...	880	81		82	
28 900	77,5	...	976	78	...	888	82	...	890	80		82,5	
29 910	80	...	30,010	82	...	870	82	...				83	
30 944	79	...	018	81	...	908	81	...				82	
31 900	78,5	...	012	81,5	...	852	82	...				83	
											0,56		

FEBRUARY, 1860.

Days of Month.	Sunrise.			10 A. M.			4 P. M.			Sunset.			Rain.
	Barom-eter uncorrected.	Thermo-meter.	Direction of Wind.	Barom-eter.	Thermo-meter.	Wind.	Barom-eter.	Thermo-meter.	Wind.	Barom-eter.	Thermo-meter.	Highest Temperature observed.	
1	29,884	79	N. E.	29,940	82	N. E.	29,860	82,5	N. E.	29,870	82	83	
2	930	79	..	966	82	..	860	82,5	..	870	82	83	
3	914	80	..	984	82	..	876	82,5	..	880	82	83	
4	920	80	..	996	82	..	876	84	..	870	82,5	84,5	
5	908	79	..	998	81	..	888	83,5	..				
6	920	77,5	..	970	82	..	850	83,5	..	870	82,5	84	
7	912	77,5	..	974	81	..	844	83	..			84	
8	864	76	..	924	80	..	850	82	..			83	
9	800	75	..	906	79	..	834	82	..			82,5	
10	856	79	..	930	82	..	835	83	..	815	82	83,5	
11	900	76	..	930	81	..	824	84	..			84,5	
12	900	76	..	954	79	..	850	83,5	..				
13	824	75	..	900	79	..	790	83	..			84	
14	810	74	..	890	79	..	794	82,5	..			83	
15	800	79	..	960	82,5	..	864	83	..			83,5	
16	872	80	..	994	82	..	894	83	..			84	
17	900	80	..	30,000	83,5	..	780	84,5	..			85	
18	850	76	..	29,924	86,5	..	800	83	..			84	
19	814	80	..	900	83	..	780	82,5	..	790	82	83	
20	840	80	..	910	83	..	820	83	..	830	82	84	
21	870	78	..	934	83	..	804	83,5	..			85	
22	830	75	..	890	79	..	778	82	..			83	
23	820	77	..	890	82,5	..	789	82,5	..			83	
24	800	78	..			..	800	83	..			84	
25		78	..	860	82	..	790	82,5	..			83	
26	750	78	..	840	82	..	750	82,5	..			83	
27	750	75	..	850	81	..	780	82,5	..	800	82	83	
28	800	76	..	884	81	..	755	82	..			83	
29	750	72	..	850	78	..	780	81	..			81,5	

MARCH, 1860.

	Sunrise.			10 A. M.			4 P. M.			Sunset.		Highest Temperature observed.	Rain.	
	Barom-eter uncor-rected.	Thermo-meter.	Wind.	Barom-eter.	Thermo-meter.	Wind.	Barom-eter.	Thermo-meter.	Wind.	Barom-eter.	Thermo-meter.			
1	29,810	73	N. E.	29,890	80	N. E.	29,750	82	N. E.	29,750	81	83		
2	800	74	..	900	81	..	800	82,5	..			83		
3	774	74	..	880	80	..	750	81,5	..	29,750	81	82		
4	774	74	..	890	81	..	740	81,5	..			82		
5	820	73	..	930	80	..	830	81	..			82		
6	820	72	..	930	79	..	840	81	..			82		
7	810	72	..	910	80	..	776	81	..			82		
8	810	72,5	..	900	80	..	776	81	..			82		
9	810	74	..	890	81	..	788	82	..			83		
10		75	..		82	..	790	82	..			83		
11	900	74	..	950	81	..	850	84	..			84,5		
12	870	77	..	950	82	..	84	84,5	..			85		
13	800	78	..	900	83	..	800	84,5	..	800	83	85		
14	840	76	..	900	81	..	800	83,5	..			84		
15	870	78	..	900	82,5	..	840	84	..			85		
16	874	77,5	..	940	83	..	820	84	..			85		
17	874	80	..	900	83	..	810	84,5	..			85		
18	850	77,5	..	900	81	..			..			85		
19	774	76	..	880	80	..	764	84	..			84,5		
20	810	77,5	..	910	83	..	868	84,5	..			85		
21	810	78	..	900	83	..	790	84	..			85		
22	770	77	..	834	81,5	..	760	85	..	800	84,5	85		
23	820	79	..	900		..	798	85	..			85		
24	879	78	..	950	82,5	..	840	86	..			86,5		
25	860	77	..	912	82,5	..	810	84,5	..			85		
26	820	78	..	900	81,5	..	800	84	..			85		
27	840	79	..	930	83	..	820	84,5	..			85		
28	850	79	..	950	85	..	810	85	..			86		
29	850	79	..	900	83	..	790	84,5	..			85		
30	820	76	..	880	83,5	..	800	84,5	..			85		
31	800	79	..	890	83,5	..	750	84,5	..			85		

APRIL, 1860.

	Sunrise.			10 A. M.			4 P. M.			Sunset.		Highest Temp. observed.	Rain.	
	Baromet. uncor- rected.	Thermo- meter.	Wind.	Baromet. ter.	Thermo- meter.	Wind.	Baromet. ter.	Thermo- meter.	Wind.	Baromet. ter.	Thermo- meter.			
1	29.800	77.5	N. E.	29.850	83	N. E.	29.780	84	N. E.			85		
2	800	77.5	Var.	890	81	Var.	776	85	Var.			86		
3	800	77	...	900	82	...	800	83	...			84		
4	800	81	...	850	83	...	772	84.5	...			85		
5	810	77.5	S. by E.	860	77	S. by E.	750	80.5	S. by E.			81		
6	800	83	...	860	84.5	...	760	84.5	...			85		
7	790	78	...	870	82.5	...	750	82.5	...			83.5		
8	782	82.5	S.	864	83.5	S.	766	83.5	...	29.800	81	81	4.50	Strong winds and cloudy sky, strong squalls with rain, 4.50 inches of rain fell between 4th and 8th.
9	766	80	...	800	82	...	700	82	...	710	82	83		
10	724	81	S. by E.	812	83	S. by E.	740	83	...			84		
11	700	82	S.	808	84	S.	730	85.5	S. by W.	780	85	86		
12	800	82	S. by W.	890	84	S. by W.	780	85.5	...			86		
13	850	81	W.	924	83.5	W.	790	86	...			87		
14	870	79.5	...	960	82.5	...	760	83	...			83		
15	934	79	...	990	81.5	...			...			83		
16	900	76.5	...	960	82	...	850	82.5	...	850	82	83		
17	860	76	...	950	82	...			...			83		
18	850	76	...	980	82	...	836	83	...			84		
19	850	75	...	950	82	...	810	83.5	...			81		
20	850	75	...	950	82	...	850	84	...			81.5		
21		76	...		82	...	844	84.5	...			85		
22	830	77.5	...	930	82.5	...			...			85		
23	800	78	...	900	83	...	800	84.5	...			85		
24		77.5	...		83	...	816	84	...			85		
25	860	77	...	934	82	...	824	84.5	...			85		
26	820	78	...	920	83	...	824	85	...			86		
27			N. W.			N. W.	824	85	N. W.			86		
28	830	79	...	910	83.5	...	824	85.5	...			86.5		
29	806	79.5	...	950	84.5	...	730	86.5	...	760	86	87		
30	790	80	...	890	84	...	760	86.5	...			87	4.50	

MAX, 1860.

	Sunrise.			10 A. M.			4 P. M.			Sunset.		Highest Temperature observed.	Rain.	
	Barometer.	Thermometer.	Wind.	Barometer.	Thermometer.	Wind.	Barometer.	Thermometer.	Wind.	Barometer.	Thermometer.			
1	29,774	80	W.	29,850	84	W.	29,720	85,5	W.			86		
2	740	80	...	830	84	...	740	86	...			87		
3		81	...	824	84	S.E.			...			86		
4	790	80	Calm.	890	85	Calm.			Calm.			87		
5	834	80	Var.	900	84	Var.	776	85,5	Var.			86		
6	800	80	...	870	85	...	780	84	...	29,800	84	85	0,38	
7	810	79	...	890	83,5	...	820	85,5	...			86		
8	840	79,5	W.	810	84	W.	790	86,5	S.			87		
9	820	82	Var.	850	84,5	S.W.	760	81	S.W.			86	2,28	
10	760	79,5	W.	836	83,5	W.			W.			86		
11	738	82,5	...	822	85,5	...	720	87,5	...			88		
12	710	80	Var.	790	82	Var.	736	78	...			83	2,00	Thunder and lightning.
13	684	78	W.	770	82,5	W.	690	86	...			87		
14	720	81,5	S.W.	765	85	S.W.	720	87	...			87		
15	750	79	W.	796	83,5	...	734	86	...			86		
16	740	80	...	820	84	W.	760	85,5	...			86		
17	784	81	...	850	84,5	W.	745	85,5	...			86		Thunder and lightning.
18	720	82	S.W.	800	85	S.W.	730	84	...			86		
19	740	79	...	800	84	...	750	84,5	...			86		
20	720	82	W.	790	85,5	W.	726	82,5	...			86	0,45	
21	710	78	...	760	80	...	700	82	...			82	0,30	
22	650	78	...	700	80	...	630	79,5	...	29,650	80	84	0,44	
23	632	79	S.	680	82	...	630	83,5	S. by E.			83	0,48	
24	636	79	S.W.	700	82,5	S.W.	600	82	S.W.			82	0,60	
25	630	78,5	Calm.	670	81	Calm.	570	80,5	...			82	1,50	
26	584	78,5	S.W.	750	81	S.W.	610	77	...			86	0,35	
27	610	79	...	675	82,5	...	600	85	...			88		
28	690	81	...	750	85	...	716	87,5	...			88		
29	736	82	...	800	86	...	830	87,5	...			89		
30	720	83	...	780	86	...	730	88	...			89		
31	750	83	...	800	86	...	724	80	...			87	9,98	

JUNE, 1860.

Sunrise.		10 A. M.				4 P. M.			Self-registering Thermometer.		Rain.	
Barome- ter.	Thermo- meter.	Barome- ter.	Thermo- meter.	Dew Point Thermo- meter.	Wind.	Barome- ter.	Thermo- meter.	Wind.	Max.	Min.		
1	29,726	83	29,790	85	S. W.	29,748	88	S. W.			2,83	Thunder and lightning.
2	700	77	734	83	75	700	86	...				
3	610	77	690	80	76	670	83,5	...			2,30	
4	624	80	710	82,5	77,5	600	78,5	...			0,32	
5	712	79	750	85,5	77,5	610	82,5	...			0,22	
6	728	80	794	85	79	700	82,5	...			0,50	
7	714	79	770	87	81	720	79	...				
8	700	79	720	81	78	680	83	...			0,39	
9	660	80	740	85	80	686	80	...			2,56	Slight Thunder.
10	740	76	784	78	81	681	80,5	...				
11	764	81	830	85	78	730	81,5	...				
12	750	81	800	87	79	750	85,5	...			0,05	
13	720	81,5	790	81	78	750	86	...			0,75	Slight Thunder.
14	712	81	750	81	77	738	84	...			0,45	
15	700	81	741	84,5	80	710	82	...				
16	674	82	740	87,5	78	700	85	...				
17	710	81,5	750	81,5	78,5			...			0,83	
18	700	79	790	81,5	78	690	84	...				
19	740	80,5	784	81	78	690	84,5	...				
20	744	80	800	79	77	740	82	...			1,33	
21	715	80	800	86	79	730	81,5	...			1,00	
22	740	80	800	86	79	720	85,5	...				
23	770	80	760	86	79	740	84	...			0,05	
24	700	80	820	85	78	780	83,5	...			0,23	
25	700	80	790	84	79	720	83,5	...			0,43	
26	680	80	750	86	79			...			0,60	
27	710	80	750	85	80	668	85	...			0,40	
28	729	80	726	82,5	78,5			...				
29	710	80	780	83,5	78	740	80,5	...	83,5	77		
30	710	79	760	83	77,5	730	83,5	...	85	77	15,24	

* The Temperature of Dew Point shewn in this column is the reading of Daniell's Hygrometer.

JULY, 1860.

Sunrise.				10			A. M.		4 P. M.			Self-registering Thermometer.		Rain.
Barome- ter uncor- rected.	Thermo- meter.	Barome- ter.	Thermo- meter.	Tempera- ture of Dew Point.	Wind.	Barome- ter.	Thermo- meter.	Wind.	Barome- ter.	Thermo- meter.	Wind.	Max.	Min.	
1 29,730	79	29,800	83	77,5	S. W.	29,700	85	S. W.	29,700	85	S. W.	83	76	0,20
2 700	80	750	85	79	..	690	83,5	..	690	83,5	..	84	79	
3 680	80	730	85	76,5	..	700	85,5	..	700	85,5	..	85	76	
4 700	78	730	81	77,5	S. by E.	756	81,5	..	756	81,5	..	81,5	74,5	
5 740	76	750	81	76,5	S.	770	82,5	..	770	82,5	..	82,5	79	
6 750	80	820	83	77	S. by W.	776	84	..	776	84	..	83	79	0,30
7 760	80	824	81,5	78,5	..	770	85	..	770	85	..	85	80,5	1,00
8 760	81	836	84	78	..	772	85	..	772	85	..	86	79	0,10
9 764	81	820	83	78	..	736	84	..	736	84	..	85	77	0,30
10 768	78	825	84,5	78,5	..	680	84,5	..	680	84,5	..	84,5	76	0,20
11 710	81	720	85	79	..	630	82	..	630	82	..	82,5	76	0,60
12 690	78	710	82	77	..	676	80,5	..	676	80,5	..	82	77	0,35
13 650	79	700	79,5	77	..	710	84,5	..	710	84,5	..	83,5	79,5	
14 676	79,5	740	85	77	..	700	84,5	..	700	84,5	..	84	79	
15 700	80	760	82	77	..	690	85,5	..	690	85,5	..	85	80	
16 704	80,5	760	83,5	77	..	716	86	..	716	86	..	84,5	80	
17 708	81	800	84	76	..	730	82,5	..	730	82,5	..	84	80	
18 710	80,5	800	83	76	..	740	80,5	..	740	80,5	..	82	77	1,15
19 740	80	800	82,5	77	..	730	81,5	..	730	81,5	..	82	77	
20 700	78	760	81	77	..	700	82,5	..	700	82,5	..	83,5	78	
21 700	79	760	82,5	77	..	712	82,5	..	712	82,5	..	82,5	79,5	
22 710	80,5	750	82	77	..	740	84,5	..	740	84,5	..	83,5	78	
23 710	80	790	82,5	76,5	..	734	82,5	..	734	82,5	..	83	76	
24 770	79	810	84	77	..	690	78,5	..	690	78,5	..	80	76	1,15
25 690	78	740	81	77	..	690	79,5	..	690	79,5	..	80	74	1,10
26 660	77,5	780	79	77	..	724	81,5	..	724	81,5	..	82	76,5	1,33
27 710	76	810	80,5	77	..	728	83,5	..	728	83,5	..	84	80	
28 750	79	840	83	79	..	710	84	..	710	84	..	82,5	80	0,15
29 750	81	800	83	77	..	740	84	..	740	84	..	83	77,5	
30 700	80,5	790	82,5	77,5	..			..			..	82,5	80	11,61
31 730	81	800	83	77,5	..			..			..	82,5	80	

Squally.
Ditto.

GENERAL REMARKS.

- 1 A. M. Cloudy ; with cirri and cirro-cumuli ; 6 P. M. cloudless sky.
- 2 „ As yesterday, swell from S. W. increasing.
- 3 „ Cloudy ; with cirri, cirro-cumuli, and nimbi ; 5 P. M. slight shower.
- 4 „ Cloudy as above : P. M. showery, with distant thunder.
- 5 Clouded—several showers.
- 6 A. M. Partially clouded & showery ; 5. 45 P. M., Kooria Moorina islands in sight.
- 7 8 A. M. anchored at Hallania in Telegraph Bay.
- 8 At anchor—moderate S. W. breeze, with swell.
- 9 6 A. M. up anchor, and steered for Jibli island. Fresh breeze from S. W. with long swell ; cloudy, with cirri and cirro-cumuli.
- 10 Partially clouded as yesterday ; at noon, hazy.
- 11 Light cumuli and cirri ; hazy with great mirage.
- 12 Sky clear ; the air intensely dry and hot.
- 13 Sky cloudless, scorching hot-wind at night, coming in gusts.
- 14 Clouded, with cirri and cirro-cumuli.
- 15 Hazy, without clouds but with mirage ; air intensely hot and very dry.
- 16 Clouds, with light cirri ; sensibly as hot as yesterday.
- 17 Hazy ; light north-easterly breeze blowing.
- 18 Fresh breeze from N. E., partially clouded, much cooler.
- 19 Partially clouded and hazy ; at 1 P. M. left for Bombay.
- 20 Light cirri and cirro-cumuli ; moderate swell from S. W.
- 21 A. M. cloudy, with cirri and cirro-cumuli ; sea moderate, evening with cloudless sky.
- 22 A. M. Partially clouded, with moderate sea ; light rain in afternoon ; cloudless evening.
- 23 A. M. cloudy, with cirri and cirro-cumuli ; less swell, evening cloudy.

(Sd.) J. WELSH,

Assistant Surgeon.

(True Copy,)

C. U. AITCHISON,

Under-Secretary to the Government of India.

NOTICES OF NEW WORKS RELATING TO SANSKRIT LITERATURE.

Mánava Kalpa Sûtra, being a portion of this ancient work on Vaidic rites, together with the commentary of Kumárida Swámin, (a facsimile of MS. 17, in the old E. I. H. Library,) with a preface by T. Goldstücker, London, 1861.

This large and deeply interesting volume consists of two somewhat disconnected halves,—a facsimile, lithographed in the shape of a *puti*, of Kumárida's Commentary on the Mánava-kalpa-Sûtras, and a preface of 268 pages on various topics connected with Professor Müller's "History of Ancient Sanskrit Literature."

Among other subjects, Dr. Goldstücker has discussed the question of the period of the use of writing in India, and our readers will be interested to learn that the note* in our journal (No. II. 1859,) where this part of Dr. Müller's work was first printed as a communication to the Society, became his "first inducement to treat the matter on this occasion."

Dr. G. strongly holds that writing was known in India before Páṇini's time, and he chiefly bases his opinion on the occurrence in Páṇini and the Sûtras of such words as *lipikara*, *paṭala*, *sûtra*, *grantha*, *varṇa*, *kāṇḍa*, &c. *Sûtra* he believes to be derived not from a "string of rules," but the primitive manner in which MSS. were bound,—a parcel of leaves kept together by a *string* through the middle. He draws an important distinction in Páṇini's use of *varṇa* and *kāra*, "*kāra* enters into composition with all vowels and consonants, provided the latter are followed by the letter *a*, while *varṇa* is joined merely to vowels and such consonants as are *without a vowel sound*;" and thus *varṇa* applies to the *written* consonant, as the spoken one must have a vowel to sound with it; and hence the propriety of the word *varṇa* as originally meaning "colour." Then again Páṇini has a Sûtra† (vi. 3. 115,) in which he informs us that the owners of cattle

* "Prof. M. has sent the paper to the Society's Journal in the hope of eliciting some fresh information from European or native scholars in India on the interesting questions which it discusses."

† कर्णे लक्षणस्याविष्टापञ्चमणिभिन्नच्छिन्नच्छिद्रसुवर्खलिकस्य ॥

कर्ण इत्येतस्मिन्नुत्तरपदे परे लक्षणवाचकस्य संहितायां विषये दीर्घः स्यात् वष्ट। अष्टन्। पञ्चन्। मणि। भिन्न। छिन्न। छिद्र। सुव। खलिक। इत्येताव

were at his time in the habit of marking their beasts on the ears, with signs of a ladle, pearl, &c., and also *eight* and *five*, which certainly point to a knowledge of written letters or numerals at that period, Similarly the use of *lopa* to express 'elision' as opposed to the *dars'ana* or 'visibility' of a letter, points to language existing in a written and not exclusively spoken form.

Various other topics of a similar character are discussed (but sometimes with needless bitterness against opponents,) among others the age of Pāṇini and his position relatively to the Prātisākhya, Kātyāyana, the Uṇādi Sūtras, &c. Dr. Goldstucker maintains that the Prātisākhya are more modern than Pāṇini, and he endeavours to prove that many of their rules are intended to supply deficiencies in the latter's Sūtras, and if the more perfect rule were the more ancient, it would be inconceivable that Pāṇini could have deliberately inserted a less complete one in his grammar. Similarly he would explain the many corrections of Pāṇini in Kātyāyana's vārtikas by a wide difference in their epochs. "The explanation I hold can only be derived from the circumstance that Pāṇini and Kātyāyana belonged to different periods of Hindu antiquity—periods separated by such a space of time as was sufficient to allow—

1. Grammatical forms which were current in the time of Pāṇini to become obsolete or even incorrect.

2. Words to assume meanings which they did not possess at the period when he lived.

3. Words and meanings of words used by him to become antiquated.

4. A literature unknown to him to arise.

By this later literature, Dr. G. understands the Āranyakas, Upanishads, Vājasaneyī Sanhitā and Śātapatha Brāhmaṇa.

We have no space to enter into the interesting arguments by which he endeavours to maintain this new position; we would confine ourselves to one collateral point in the investigation, which seems to us to possess peculiar interest as well as novelty.

वर्जयित्वा । द्विगुणकर्णः त्रिगुणकर्णः । पशूनां स्वामिविशेषसम्बन्धज्ञापनार्थं यच्चि-
ह्नं क्रियते तदिह लक्षणं । लक्षणस्य किं । शोभनकर्णः । अविष्टादीनां किं । विष्ट-
कर्णः । अष्टकर्णः । पञ्चकर्णः । मणिकर्णः । भिन्नकर्णः । छिन्नकर्णः । छिद्रकर्णः ।
खुवकर्णः । स्वस्तिककर्णः ॥

It is well known that the usual date for Páṇini, in the fourth century B. C., rests on a combination of slight circumstances which only gains its currency from the utter absence in Indian literature of any thing approaching to historical certainty. Dr. Johnson used to talk of the 'one-eyed monarch of the blind,' and, compared with the hopeless obscurity of all other Indian literary dates, that of Páṇini from Buddhist books backed by the story-teller Somadeva, really does seem to give a shadow of basis for historical research; still it is well for the Sanskrit student to be occasionally reminded by such a rough realist as Dr. Goldstücker, of the uncertain materials on which at best we ground the assumed era for Páṇini. It is only in Hindu literature that such a list of infinitesimal probabilities would be allowed to add up into an assumed certainty,—and even then we have no right to be content with doubts and guesses, if better materials are in our reach.

Dr. Goldstücker professes to have settled the era of Pátanjali on far more reliable grounds, and as the question is of no little importance, we wish to give our readers a clear idea of his reasonings. They rest on a single rule in the Mahábháshya,—Pátanjali's great commentary on Páṇini's Sūtras and Kátyáyana's supplementary aphorisms,—a rule well worth all Pythagoras's 'golden rules,' if it leads us to the one authenticated date in the literary history of ancient India.

In one of his rules, Pátanjali refers to the Maurya kings, which proves that at any rate he was posterior to Chandragupta, the contemporary of Seleucus, while the Rájataranginí shews that his grammar was known in Kashmir in Abhimanyu's reign about 60 A. D.; but another of his rules determines his date more precisely, as follows:

"In Sūtra iii. 2. 111, Páṇini teaches that the imperfect must be used, when the speaker relates a past fact belonging to a time which precedes the present day. Kátyáyana improves on this rule by observing that it is used too when the fact related is *out of sight, notorious, but could be seen by the person who uses the verb*. And Pátanjali again appends to this Vártika the following instances and remark, "*The Yavana besieged* (imperfect) *Ayodhyá*; the Yavana besieged (imperfect) the Mádhyamikas. Why does Kátyáyana say 'out of sight?' (because in such an instance as) 'the sun rose,' (the verb must be in the aorist). Why 'notorious?' (because in such an

instance as) ‘Devadatta made a mat,’ (the verb must be in the preterite). Why does he say, ‘but when the fact could be seen by the person who uses the verb?’ (because in such an instance as) ‘according to the legend Vāsudeva killed Kansa,’ (the verb must likewise be in the preterite).”*

“Hence he plainly informs us, and this is acknowledged also by Nāgōjibhaṭṭa, that he lived at the time—though he was not on the spot—‘when the Yavana besieged Ayodhyá,’ and at the time when ‘the Yavana besieged the Mádhyamikas.’ For the very contrast which he marks between these and the other instances, proves that he intended practically to impress his contemporaries with a proper use of the imperfect tense.”

The Mádhyamikas are the well-known Buddhist sect founded by Nágárjuna; and the only period in which the conquests of the Greek kings in Bactria and Cabul could have extended as far as Oudh, must have been under Menander, who reigned from B. C. 144 to about B. C. 124. One coin of his has been found at Mathura, and Strabo expressly says, “πλείω ἔθνη κατεστρέψαντο οἱ Ἕλληνες ἢ Ἀλέξανδρος καὶ μάλιστα Μένανδρος (εἰ γε καὶ τὸν Ὑπανὴν διέβη πρὸς ἑω καὶ μέχρι τοῦ Ἰομάνου προῆλθε).”

If these conjectures be correct Pátanjali was a contemporary of Menander, and thus one cardinal date has been ascertained in the chaos of ancient Indian chronology.

For the work itself, of which Dr. Goldstücker has here published a facsimile, we much regret that he has withheld from us the results of his editorial labours. A facsimile of the original is no doubt precious, but ‘*ars longa, vita brevis*,’ and why must every one spend his days and eyesight over a corrupt text which the learned editor is

* Pāṇini अनद्यतने लङ्: Kátyáyana, परोक्षे च लोकविज्ञाते प्रयोक्तुर्दर्शनविषये Patanjali, परोक्षे च लोकविज्ञाते प्रयोक्तुर्दर्शनविषये लङ् वक्तव्यः। अरुणयवनः साकेतं। अरुणयवनो माध्यमिकान्। परोक्ष इति किमर्थं। उद्गादादित्यः। लोकविज्ञात इति किमर्थं। चकार कटं देवदत्तः। प्रयोक्तुर्दर्शनविषय इति किमर्थं। जघान कंसं किल वासुदेवः Kaiyaṭa परोक्षे चेति। अननुभूतत्वात् परोक्षापि प्रत्यक्षयोग्यतामात्राश्रये दर्शनविषय इति विरोधाभावः Nagojibhaṭṭa, भाष्ये जघानेति किम्। स बभूव हि नेदानीन्तनप्रयोक्तुर्दर्शनयोग्योऽपीत्यर्थः। अरुणदित्युदाहरणे तु तुल्यकालः प्रवर्तत इति बोध्यम्

far better qualified to explain? On all principles of the division of labour, we had a right to demand a copious body of notes and corrections, whereas we are now obliged to sit down contented with a bare facsimile of an original which the editor himself pronounces "hopelessly incorrect."

The Mánava-kalpa-sútras belong to the old recension of the Yajur Veda, the Taittiríya Sanhitá. The present work contains the first four books—the Yájamána book in two chapters; the Agnyádána; the Agnihotra; and the Cháturmásya sacrifices in six chapters. It only gives Kumáрила's commentary, but as the words of the Sútras are generally explained at some length, it would be possible to recover most of them from the *ṭiká*. Dr. G. mentions another MS. in the old E. I. H. Library, which contains the Sútras of the Agnishtóma rites in five Adhyáyas.

The Society has two MSS.* of a part of the Mánava Sútras (*Maitráyaṇī-s'ákháyám Mánava-Sútra*); and, at the end, the Sútras are said to consist of five divisions. 1, The *Práksoma-bhága*. 2, *ishṭíkalpa-bhága*. 3, *agnishtomabhága*. 4, *rájasúyabhága*. 5, *agnichayana-bhága*. These MSS. only contain the fifth portion in five adhyáyas. In the Sanskrit College Library there is a MS. (78 foll.) containing the *práksomabhága* in eight adhyáyas, which is therefore, for the most part, that portion of the text, which has been published by Dr. Goldstücker in Kumáрила's Commentary.

The following are the first words of each adhyáya:—

1. उत्तरत उपचारो विहारः. (Dr. G. fol. 1.)
2. आ भूते पश्चाद् गार्हपत्यस्योदीच उद्धूय संकृणाति.
3. होतृवस्थितेऽग्नये समिध्यमानाय.
4. पूर्णे चन्द्रमस्युपवसेत्.
5. अग्नीनादधीत वसन्ते ब्राह्मणः. (Dr. G. fol. 55.)
6. उद्धराहवनीयमित्युक्त्वा. (Dr. G. fol. 84.)
7. चातुर्मास्यान्यारण्यमानः पूर्वां पौर्णमासोऽनुषोष. (Dr. G. fol. 106.)
8. एन्द्राग्नेन पशुना यज्यमानः.

Its concluding words are इति मानवसूत्रे प्राक्क्षोमाख्ये प्रथमप्रभृतिसमान पञ्चमविभागे (query प्रथमविभागे?) ऽष्टमोऽध्यायः समाप्तः ॥

E. B. C.

* One MS. contains 37 foll., the other 18 foll.; the commencing words are अग्निं चेषमान उखां सभेरत् ।

Literary Intelligence.

The following extract from a letter dated Pekin, 4th November, 1860, addressed to our Curator by Mr. Swinhoe, will be read with interest.

“I am in receipt of your letter of the 22nd August, in which you acquaint me of the loss of the two bucks of *Cervus sika*. I am extremely sorry to hear the news, as it was only by the most uncommon good luck that I was enabled to procure those I sent you. If I am fortunate enough to visit Japan, or to extend my acquaintance in that quarter, I may be enabled to procure some more. All the Deer I sent you were received from Japan, and consequently *Cervus sika*. *Cervus pseudaxis*, from Formosa, you have only seen the skull of. There are several fine living examples of this Deer at Amoy, but I was unable to coax the proprietor to let me have one. The Dutch Commissioner at Amoy procured a fawn of this species and forwarded it some months ago to Holland, but I have not since heard as to whether it arrived safely or not. I think I told you, from Canton, that the Roebuck (*Cervus pygargus*) is preserved there in the gardens of a Mandarin. They are said to be from inland China, but people are not allowed to shoot them. A very fine species of Stag is found here, in the parks of the Chinese Emperor's summer palace. The grounds extend up some high hills now covered with snow, and it is here where these animals abound. Major Garret, one of the General's A. D. C.'s, has been out several times and shot a few. He has preserved the heads of three of the finest bucks; two young bucks and a doe fell to my share, and these I have carefully skinned. The old bucks are indeed noble animals. They stand to the shoulder about $4\frac{1}{2}$ feet, are brown on the back with white spots, the back of the neck being reddish, and the rump and under tail white. The horns are so shaped. * * * I think you told me that *Cervus Wallichii*, the Siberian Stag, was noted from North China. If such is the case, these are probably of that species. The bucks given to me are, one 2 years, and one 1 year; the doe had milk in her teats and was evidently suckling. A pair of gigantic horns were picked up by a cartman coolie in some Chinese house; these had two frontal snags. I must strongly believe them to belong to the Kashmiri Stag; but

I can get no account of them from the natives. They were probably brought here from some distance, as Stag's horns are valued in China for medicinal purposes.

"This is a great country for *Picidæ*, *Corvidæ* and *Fringillidæ*, but deficient in other families. I have procured and noted *Gecinus canus* [?], *Picus bisuki* of Schlegel, (both found in Japan,) and a lesser spotted Woodpecker which I take to be new. The *Corvidæ* are *Corvus sinensis*, *C. torquatus*, *Fregilegus pastinator*, *Monedula daurica*, (Pallas,) *M. neglecta*, (a black species) of Schlegel, *Pica media*, and *P. cyana*; ALL in abundance. The *Fringillidæ* are the following: *F. montifringillas*, *F. spinus*, *F. sinensis*, *F. Vinota*, *F. borealis*, *F. coccothraustes*, and *Loxia currirostra*. It is curious that the ordinary Butcher-bird of this district is *Lanius bucephalus*, whereas at *Pahinwan*, farther north, *L. lucionensis* was the only species. I have met with *Zosterps japonicus*, and am happy to announce that my little southerly species is perfectly distinct. The only *Parus* found here is *Parus palustris* of Europe, strange to say. But in birds I am disappointed. Of Quadrupeds or Mammals, I have a few; a Hedgehog, new, I believe, a Mole, and a small Mouse. Mons. Zill, an amateur naturalist accompanying the present expedition, who, by the way, is acquainted with you, has besides procured an *arctomys* [?] or Squirrel-rat. I have also a few Bats, all of one species, and several reptiles.

"The other day I picked up the feathers of an *Oreocincla*, the body having been probably eaten by a Hawk. I have not yet met with the bird alive so far north; indeed I have never met with but two in all my Chinese experience: you sent me among the skins sent an *Oreocincla dauma*. Have you any other species in India and do you know anything about their habits? I am very anxious to get some particulars about them. How many species do you know of, where are they to be found, and do you know anything of their habits, their nesting, &c.? Are their eggs and nests procurable? *Oreocincla varia* of Horsfield is confined, I believe, to Java, where it is said to be very scarce. It is a most singular and anomalous species, at times shewing itself in most distant parts of the world, in the most erratic manner, and apparently nowhere found resident."

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1861.

*The Annual General Meeting of the Society was held on the 9th
Instant.*

A. Grote, Esq., President, in the chair.

The following gentlemen duly proposed at the last meeting, were
balloted for, and elected ordinary members :—

Hon'ble J. C. Erskine, C. S.

Lewis Jackson, Esq., C. S.

Thompson Dodsworth, Esq.

The following gentlemen were named for ballot as ordinary mem-
bers at the next meeting :

Captain H. Godwin Austin, H. M.'s 24th Foot, Surveyor General's
Department, proposed by Colonel A. S. Waugh, seconded by Captain
T. G. Montgomerie.

Captain A. B. Melville, late 67th N. I., Surveyor General's
Department, proposed by Colonel A. S. Waugh, seconded by Captain
T. G. Montgomerie.

Lieutenant W. J. Stewart, Bengal Artillery, Revenue Survey
Department, proposed by Major Thuillier, seconded by Captain
W. N. Lees.

R. Forrest, Esq., Civil Engineer, Superintendent of Canals, Dehra
Dhoon, proposed by Colonel A. S. Waugh, seconded by Major
Thuillier.

Harry Duhan, Esq., Extra Civil Assistant, G. T. Survey, Dehra
Dhoon, proposed by Colonel A. S. Waugh, seconded by Major
Thuillier.

Stewart Bailey, Esq., C. S., proposed by Mr. Atkinson, seconded
by Mr. Grote.

Major Warrand, Bengal Engineers, proposed by Mr. Atkinson, seconded by Major Sherwill.

A. S. Harrison, Esq., B. A., Inspector of Schools for Behar, proposed by Mr. Atkinson, seconded by Mr. Cowell.

Frederick S. Growse, Esq. C. S., proposed by Mr. Cowell, seconded by Mr. Atkinson.

H. Bell, Esq., C. S., proposed by Mr. Atkinson, seconded by Mr. H. F. Blanford.

J. Brown, Esq., M. D., B. M. S., proposed by Dr. Fayrer, seconded by Mr. Atkinson.

The Secretary read the following report for 1860.

ANNUAL REPORT.

The Council in presenting their Annual Report have the satisfaction to notice the promising state of the Society's affairs during the past year.

The accession of members consequent upon the reduction in the rate of subscription has been

Ordinary.	Paying.	Absent.
1850 142	136	6
1851 130	124	6
1852 139	122	17
1853 146	123	23
1854 155	129	26
1855 162	128	34
1856 167	131	36
1857 147	109	38
1858 133	95	38
1859 180	135	45
1860 242	195*	47

* Of these, one is a life member.

considerable. The rolls of the Society during the ten years previous to the date of the reduction, only shewed an average of 146 ordinary members and 12 elections. Last year however, (in consequence of the reduction) a large increase took place, which has become still more manifest

during the year now under review, as our rolls now exhibit exclusive of the losses by retirement (7) and by death (3) a total of 242 against 180 members, and of 69 against 53 elections of the preceding year. Deducting, however, the number, absent in Europe, there remains a total of 195 paying members.

The Council having resolved to nominate for the full number of Honorary members permitted by the Society's rules, six selections for vacancies on that list have taken place during the year, as follows :—

Dr. Albrecht Weber,
Dr. Robert Wight,
Dr. Aloys Sprenger,

Edward Thomas, Esq.,
Col. George Everest,
Mons. Stainslas Julien.

The Corresponding members of the Society elected during the year are the

Rev. H. Baker, Tinnively,
Mr. R. Swinhoe, Amoy,
Dr. M. Haug, Poonah.

The obituary of the past year contains the name of one of the oldest members and warmest friends of the Society, the late Professor Horace Hayman Wilson. The services rendered by him to the Society and to the cause of Oriental literature have already been put upon record in the proceedings for July last, when a resolution was passed, expressive of the Society's sense of the severe loss which it had sustained. Another casualty during the year on the list, unfortunately but too short a one, of English Orientalists, has deprived the Society of the intended editor of the late Sir H. Elliot's unpublished materials for a history of Mahomedan India, Mr. W. W. Morley.

Among its ordinary members, the Society has to regret the death of the Right Hon'ble James Wilson, S. Lushington, Esq., C. S., and Rajah Ramchand Sing.

FINANCE.

The President briefly drew attention to the deficit in the annual income of the Society and to the necessity of supplying it by continued exertions to obtain accessions of members. He thought the Society were to be congratulated on the state of the Oriental Fund, and on the activity which the report showed to have prevailed in that Department. He considered that for this activity much of the credit was due to Captain Lees.

The introduction of the reduced rates of subscriptions necessitated a division of the Society's members into two classes resident and non-resident. Of the 195 paying members now on the rolls, 101 belong to the former, and 94 to the latter class. Estimating their subscriptions at the two rates respectively, of 48 and 24 rupees per annum, the total income would amount to Rs. $4,848 + 2,256 = 7,104$, which is less than that derived from the average number, (146) of

subscribers paying 64 rupees a year under the old rates; the deficiency being rupees 2,240 which has to be provided for by an additional number of $46\frac{1}{2}$ resident or 93 non-resident members.

The amount of contributions inclusive of the arrears of former

* CONTRIBUTIONS.			
1850	7,981	3	9
1851	8,583	4	5
1852	6,373	1	3
1853	7,778	9	3
1854	7,082	"	"
1855	7,166	"	"
1856	8,096	"	"
1857	7,068	"	"
1858	6,923	8	"
1859	6,750		
<hr/>			
	73,801	10	8
<hr/>			

Average of which is
Rs. 7,380-2-8

years realized during the last year is Rs. 6,441, which, compared with the average of collections of the previous ten years as shewn in the margin* is satisfactory.

The assets of the Society amount to Rs. 6,991-1-2 exclusive of the amount of outstanding claims, Rs. 5,747-1-6, a considerable portion of which will probably be realized during the current year. The liabilities fall short of Rs. 3,200 which is principally on account of printing, &c.

Statement No. 1 exhibits the total Expenditure at Rs. 14,973-4-4, while the total Receipts amount to Rs. 14,085-8-6, showing an excess of expenditure of Rs. 887-11-10 over the income.

INCOME.

Contribution,	...	Rs.	6,704	15	8
Admission Fee,	...	"	1,120	0	0
Journal,	...	"	643	3	11
Library,	...	"	589	15	3
Museum,	...	"	3,605	6	1
Secretary's Office,	...	"	16	3	0
Vested Fund,	...	"	258	11	1
General Establishment,	...	"	20	4	4
Profit and Loss,	...	"	44	0	0
Miscellaneous,	...	"	9	2	8
<hr/>					
Total,	...	Rs.	13,011	14	0

The estimate of probable Income and Expenditure of the ensuing year is given in the margin.

The monthly average being	Rs.	1,084	5	2
EXPENDITURE.				
Journal,	...	Rs.	1,750	14 0
Library,	...	"	1,735	8 9
Museum,	...	"	5,710	6 2
Secretary's Office,	...	"	1,707	6 9
Building,	...	"	1,159	1 0
Vested Fund,	...	"	3	0 1
Miscellaneous,	...	"	564	15 3
Contribution,	...	"	43	8 0
Stacey Coin Collection,	...	"	102	4 0
Income-tax,	...	"	120	0 0
Profit and Loss,	...	"	20	7 4
<hr/>				
Total,	...	Rs.	12,917	7 4

Shewing a monthly average of Rs. 1,076 7 $3\frac{1}{2}$

LIBRARY.

Upwards of 400 volumes have been added to the Library during the past year, a considerable portion of which are presentations from learned Societies and Institutions. For the better arrangement of these and other accumulations, several new book-cases have been provided. The leading Scientific and Literary Periodicals of Europe obtained either by purchase or exchange, are as usual laid on the table of the reading room. A supplementary catalogue which had been completed in 1858, and corrected up to the present date, is in the hands of the Printer. A corrected MS. catalogue of the Sanscrit Library, has also been finished.

The Coin Cabinet has received few additions during the year, but several offers for exchange and purchase of duplicates have been received since the Council notified their wish to collectors and others to dispose of their duplicates. A Sub-Committee has been formed, and a Coin Fund opened for the credit of all sums realized by sales, and as a provision from which the Committee will obtain the means of extending and improving the Society's cabinet.

MUSEUM.

Important and valuable contributions have been made to the

*Natives.	
Males,	78321
Females,	3490
Europeans.	
Males,	1880
Females,	946
Total,	<u>84637</u>

Average is 273 per day.

Museum, the popularity of which the Council has the gratification to observe is rapidly on the increase, as will be perceived from the daily average of visitors* to the Institution during the past year, which is 273 against 185, of 1859, the total for the year

being 84,637, exclusive of Sundays and Holidays.

Mr. Theobald's Catalogue of the shells in the Society's cabinet, the preparation of which was announced in the last annual report, has since been completed and published. The attention of the Natural History Committee has been drawn to his suggestion for the better preservation of some of the specimens. Mr. Theobald has now offered to make a new arrangement of the Geological collections, and Mr. Blanford has similarly undertaken to prepare a Catalogue of some of the Palæontological remains in the Society's Museum. Both these offers have been cordially acknowledged by the Council

They regret, however, to have to state that the Curator's Catalogue of Mammalia is still incomplete, the delay in its publication, which the President last year announced as certain to take place before the occurrence of their next annual meeting, has caused the Council much disappointment.

JOURNAL.

Four Nos. of the Journal have been published during the year. They include several valuable and interesting papers on subjects connected with the researches of the Society.

OFFICE BEARERS.

The Librarian and Assistant Secretary, Babu Gourdos Bysack, resumed the charge of his duty in July last, and has again obtained leave of absence, preparatory to his resigning the service of the Society, to which during his incumbency he has proved a very useful officer.

Babu Lalgopal Dutt, B. A., who officiated during his absence in the preceding part of the year, has been provisionally appointed as his substitute.

ORIENTAL FUND.

The Council have great pleasure in stating that during the past year the new series of the *Bibliotheca Indica* (which was announced in their last Report as about to be commenced,) has been begun, and four numbers have already appeared, being the commencement of three valuable works,—the translation of the *Súrya Siddhánta* by Pundit Bapu Deva, under the superintendence of the Venerable Archdeacon Pratt. The *Vais'eshika Sutras* with two commentaries, edited by Pundit Jaynarayan Tarkapanchanan and Nanda Kumar Tarkaratna; and the *Tarikhi Ferozshahi* of Ziaa Barni, edited by Sayid Ahmad Khan, under the superintendence of Captain W. N. Lees. The Council would especially draw attention to the last mentioned publication, the first only, they hope, of a series of such works, and furnishing much valuable and contemporary material for the student of Mahomedan Indian history. They have undertaken, in the course of next year, to continue the series

by the publication of the *Tarikhi Masaudi*, by Abul Fazl Baihaki, Sultan Masaud's Secretary. The late Mr. Morley had prepared the text from several MSS., and had just before his decease, at the instance of Mr. E. Thomas, offered it to the Society for publication, an offer which his executors have since carried out by forwarding the MS. which is now in the Society's possession.

Mr. F. E. Hall has further engaged to edit the *Dasa Rūpa*, the oldest authority on the dramatic theory of the Hindus, and to add an English translation to his edition of the text.

The editors of the old series have been actively employed in completing the works which yet remain unfinished.

The titles of the fasciculi of the old series published during the past year are :

1. Dictionary of Technical Terms used in the sciences of the Musulmans, edited by Moulavies Abd-el Huq and Gholam Kadir, under the supervision of Captain W. N. Lees, LL. D., Nos. 156, 158, 159, 162, 165, Part. II., Fasc. XII. to XVI.

2. The Conquest of Syria, commonly ascribed to Aboo Abd Allah Mohammad, by Omar Al Waquidi, edited by Captain W. N. Lees, LL. D., No. 164, Fasc. VII.

3. *Sanhita* of the Black *Yajur Veda* with the commentary of Madhava Acharya, edited by Dr. E. Roer and E. B. Cowell, M. A., Nos. 157, 160, 161, 166, Fasc. X. to XIII.

4. The *Marcandeya Purana*, edited by Rev. K. M. Banerjee, No. 163, Fasc. IV.

The titles of the fasciculi of the new series, are :

1. Hindu Astronomy, the *Surya Siddhanta*, translated from the Sanscrit, by Pundit Bapu Deva S'astri, under the superintendence of the Ven'ble Archdeacon Pratt, No. 1, Fasc. I.

2. The *Tarikh-i-Feroz-shahi* of Ziaa al Din Barni commonly called Ziaa-i-Barni, edited by Saiyid Ahmad Khan, under the supervision of Captain W. N. Lees, LL. D. ; Nos. 2 and 3, Fasc. I. II.

3. *Vais'eshika Sutras* with *Upaskāra* and *Vivriti* Commentaries, edited by Pundits Jaynarayan Tarkapanchanan and Nanda Kumar Tarkaratna, No. 4, Fasc. I.

The meeting then proceeded to ballot for the Council and officers for the ensuing year. Mr. H. F. Blanford and Moulavie Abdool Lutf

Khan, Bahadur, were appointed scrutineers, and at the close of the ballot, the Chairman announced the following result :

COUNCIL.

A. GROTE, ESQ.,

President.

DR. T. THOMSON.

MAJOR H. L. THUILLIER.

BABU RAJENDRA LAL MITRA.

} *Vice-Presidents.*

BABU RAMAPERSAD ROY.

HON'BLE SIR H. BARTLE FRERE.

COL. BAIRD SMITH.

CAPT. W. N. LEES.

T. OLDHAM, ESQ.

DR. W. CROZIER.

DR. J. FAYRER.

MAJOR. W. S. SHERWILL.

R. JONES, ESQ.

W. S. ATKINSON, ESQ.

E. B. COWELL, ESQ.

} *Joint Secretaries.*

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY,
FOR
THE YEAR 1860.

STATEMENT
Abstract of the Cash Accounts

RECEIPTS.

	1859.			1860.		
CONTRIBUTIONS,	..	6,750	0 0		6,441	7 0
Received from Members.						
ADMISSION FEE.						
Received from new Members,	..	1,248	0 0		2,016	0 0
JOURNAL.						
Sale proceeds of, and Subscriptions to, the Journal of the Asiatic Society,	..	339	0 0		1,094	8 9
LIBRARY.						
Sale proceeds of Books,	..	552	6 0		432	11 6
MUSEUM.						
Received from the General Treasury at 300 Rs. per month,	..	3,600	0 0	3,600	0 0	
Savings,		14	2 3	
Fines,		2	0 0	
					3,616	2 3
SECRETARY'S OFFICE.						
Sale of Postage stamps,	..	0	0 0	11	0 0	
Discount on ditto,	0	12 6	1	1 6	
Refund of postage,	9	9 0	3	7 6	
					15	9 0
VESTED FUND.						
Interest on Company's paper received from the Bank of Bengal,		245	0 0		245	0 0
GENERAL ESTABLISHMENT.						
Fines,	4	10 6		19	8 0
DEPOSITS,	98	7 0			
Prem Chaund Turkobagish,		4	0 0	
Doctor E. Roer,		8	0 0	
J. B. N. Henessey, Esq.		18	0 0	
J. Hovenden, Esq.		12	0 0	
J. E. T. Aitchison, Esq.		12	0 0	
W. Theobald, Esq. Jr.		24	0 0	
J. P. Grant, Esq. Jr.		36	0 0	
G. Shelverton, Esq...		18	0 0	
Baboo Nobinchunder Roy,		5	0 0	
John Strachey, Esq.		12	0 0	
Rev. F. Mason,		0	10 0	
Captain J. C. Haughton,		6	0 0	
Rajah Bunsput Singh,		18	0 0	
Lient. H. Sconce,		6	0 0	
G. H. M. Batten, Esq.		18	0 0	
					197	10 0
Carried over,					14,078	8 6

No. 1.

of the Asiatic Society, for 1860.

DISBURSEMENTS.

1859.

1860.

JOURNAL,	1,716	4	6						
Freight,				106	11	0			
Printing charges,				3,035	0	6			
Commission on sale of Books,				2	4	4			
Purchase of Postage stamps,				27	8	0			
Packing charges,				10	9	9			
Purchasing a blank Record Book,				1	8	0			
							3,183	9	7
LIBRARY,	2,276	1	3						
Salary of the Librarian for 12 months at Rs. 70									
per month,				840	0	0			
Establishment ditto,				73	0	0			
Purchase of Books,				110	0	0			
Book Binding,				252	14	0			
Commission on sale of Books,				3	3	2			
Landing charges,				1	12	6			
Charges for bringing a baked clay Inscription									
from Gya,				10	0	0			
Ditto for copying the supplementary Catalogues									
for press,				12	0	0			
Freight for sending books to London,				1	6	3			
Charges for cleaning books,				27	12	0			
Petty charges,				0	9	3			
							1,332	9	2
MUSEUM,	5,604	14	4						
Salary of the Curator E. Blyth, Esq. at Rs. 250									
per month, 12 months,				3,000	0	0			
House-rent Rs. 40 per month, 8									
months,	320	0	0						
Ditto, Rs. 80 per month, 4 months,	320	0	0						
				640	0	0			
Establishment,				540	0	0			
Extra Taxidermists' salary,				739	7	3			
Contingent charges,				174	11	6			
Printing charges,				772	8	0			
Purchase of 7 pairs of Deer horns,				40	0	0			
Fixing and lining 6 glass cases with broad									
cloth,				18	0	0			
A blank book for entering the names of Visitors,				7	4	0			
Repairing and supplying new keys to the									
Museum cases,				56	15	6			
Freight,				11	11	0			
Charges for cutting the Kurruckpore Meteoric									
Iron,				45	0	0			
Dawk Banghy charges,				15	12	0			
Stationery,				3	12	0			
							6,065	1	3
Carried over,	10,581	4	0						

Brought over, 14,078 8 6

MESSRS. WILLIAMS AND			
NORGATE,	36	4	0
Sale proceeds of Goldstucker's Sanskrit and English Dictionary, Vol. I. p. 3, ..	2	8	0
Freight on Parcel received through Rajah Radhakant Deva,.. ..	1	6	0
Duty on ditto,	1	0	0
Received through Mr. Atkinson, as per his order to pay to the Entomological Society, London 4s. 3d. at 2 shillings per Rupee, ..	2	2	0
	<hr/>		
		7	0 0
	<hr/>		
		14,085	8 6

BALANCE OF 1859.

Bank of Bengal, ..	2,796	14	3
Cash in hand, ..	9	14	9
	<hr/>		
		2,806	13 0
Inefficient Balance, ..	72	0	0
	<hr/>		
		2,878	13 0

Carried over, 16,964 5 6

Brought over, 10,581 4 0

SECRETARY'S OFFICE, ..	1,715	13	9		
General Establishment, ..	..	..	790	0	0
Secretary's Office Establishment, ..	..	..	751	0	0
Petty charges, ..	..	..	15	9	3
Stationery, ..	..	..	84	8	6
Purchase of Postage stamps, ..	..	..	34	14	0
Postage paid, ..	..	..	15	8	0
A Sheet Almanac for 1860, ..	..	..	1	0	0
Two blank books, ..	..	..	10	4	0
Printing charges, ..	..	..	29	0	0
A Lever Embossing Press, ..	..	..	13	10	0
				1,745	5 9

BUILDING, ..	..	2,728	13	0	
Assessment, ..	..	..	270	0	0
Ditto for Lighting, ..	..	..	72	0	0
Preparing a new shade for the out offices, ..	..	..	36	0	0
Charges for mettling the compound, ..	..	..	14	2	0
				392	2 0

DEPOSIT, ..	..	65	12	0	
E. B. Cowell, Esq., ..	..	..	3	1	0
Prem Chaund Turkobagish, ..	..	..	4	0	0
W. Theobald, Esq. Jr., ..	..	..	32	0	0
Rev. Isidor Lowenthal, ..	..	..	4	0	0
Rev. F. Mason, ..	..	..	0	8	0
G. H. M. Batten, Esq., ..	..	..	6	0	0
Lient. H. Sconce, ..	..	..	6	0	0
Rajah Bansput Singh, ..	..	..	6	0	0
Captain J. C. Haughton, ..	..	..	6	0	0
John Strachey, Esq., ..	..	..	6	0	0
G. Shelverton, Esq., ..	..	..	6	0	0
J. P. Grant, Esq. Jr., ..	..	..	12	0	0
J. E. T. Aitchison, Esq., ..	..	..	12	0	0
Major J. Hovenden, ..	..	..	12	0	0
J. B. N. Hennessey, Esq., ..	..	..	18	0	0
Dr. E. Roer, ..	..	..	8	0	0
Lient.-Col. J. Abbott, ..	..	..	19	7	0
Major S. R. Tickell, ..	..	..	18	0	0
Baboo Nobinchunder Roy, ..	..	..	5	4	0
Moonshee Narain Doss, ..	..	..	7	8	0
				191	12 0

VESTED FUND, ..	..	0	9	10	
Paid Commission upon Interest on Company's Paper, ..	..	..	0	9	7
Ditto Income Tax on ditto, ..	..	..	4	13	0
				5	6 7

Carried over, 12,915 14 4

Brought over, 16,964 5 6

 Co.'s Rupees,.. 16,964 5 6

Errors Excepted.

 GOURDOSS BYSACK,
Assistant Secretary.
*Asiatic Society's Rooms,
 The 31st Dec. 1860.*

Brought over, 12,915 14 4

MESSRS. WILLIAMS AND						
NORGATE, ..	..	57	14	0		
Paid Messrs. Gillanders, Arbutnot and Co. as						
per their order, £100, at 2 shillings per Rupee,	..	1,000	0	0		
CONTRIBUTIONS, ..	..	128	0	0		
Receipt Stamps for collecting contributions						
under the new stamp Act, ..	..		2	8	0	
COIN FUND, ..	..	0	0	0		
Paid Manager of Calcutta Auction Company for						
an Iron Safe, ..	..	300	0	0		
Conveyance hire for ditto, ..	..	4	0	0		
Purchase of a blank book for Coins, ..	..	2	12	0		
					306	12 0
INCOME TAX.						
Paid Income Tax on Mr. E.						
Blyth's Salary, from July to						
November, 1860, ..	..	0	0	0	50	0 0
PROFIT AND LOSS.						
Cash stolen from the Society's						
Chest, ..	..	0	0	0	61	6 0
MISCELLANEOUS, ..	..	778	9	4		
Advertising charges, ..	..			14	1	0
Meeting charges, ..	..			168	0	6
Oiling, cleaning and regulating a Clock, ..	..			4	0	0
Paid E. Blyth, Esq., for the purchase of a						
Horse, ..	..	250	0	0		
Ditto for a green baize screen with roller for						
the Meeting Room, ..	..	60	0	0		
Ditto for 2 hanging Solar Lamps, ..	..	16	0	0		
Ditto for 4 wire panka protectors, ..	..	6	8	0		
Ditto for a dozen of sissoo wood Chairs, ..	..	55	8	0		
Ditto stamp-fee to the Bank for blank Stamped						
Cheques, ..	..	1	9	0		
Salary of a ticca Mallee, ..	..	22	13	0		
Repairing 4 hanging Argand Lamps, ..	..	6	0	0		
Petty charges, ..	..	32	4	6		
					636	12 0
					14,973	4 4
BALANCE.						
Bank of Bengal, ..	..	1,654	13	2		
Cash in hand, ..	..	85	7	6		
				1,740	4	8
Inefficient Balance, ..	..			250	12	6
					1,991	1 2
					Co.'s Rs...	16,964 5 6

EWD. B. COWELL,

Secretary, Asiatic Society.

STATEMENT,
Abstract of the Oriental

	1859.			1860.		
SALE OF ORIENTAL PUBLICATIONS, Rs.						
Received by sale of Bibliotheca Indica,	1,317	1	6	..	779	2 9
Ditto by subscriptions to ditto,	..	..	..	..	56	4 0
Ditto by sale of White Yajur Veda,	..	..	..	..	114	0 0
Ditto by refund of Postage,	..	..	..	..	0	15 0
						<u>950 5 9</u>
GOVERNMENT ALLOWANCE.						
Received from the General Treasury, at						
500 per month, 12 months,	..	6,000	0 0		6,000	0 0
VESTED FUND.						
Received interest on Company's Paper						
from the Bank of Bengal,	..	140	0 0	..	427	8 0
Ditto Discount on Purchasing Co.'s						
Paper,	..	..	..	..	196	10 5
Ditto renewing Fee on ditto ditto,	..	..	..	..	1	0 0
						<u>625 2 5</u>
DEPOSIT,						
Received from Mahomed Hajee,	..	89	4 0	..	26	3 0
CUSTODY OF ORIENTAL WORKS,						
Savings of Establishment,	..	6	10 3	..	7	1 9
Fines,	..	..	..	..	1	0 0
						<u>8 1 9</u>
BALANCE OF 1859.						
Bank of Bengal,	..	..	11,166 11 11			
Cash in hand,	..	..	25 15 8			
					11,192	11 7
Inefficient Balance,	..	..	..	..	954	8 6
						<u>12,147 4 1</u>

Carried over, 19,757 1 0

No. 2.

Fund for the year 1860.

	1859.	1860.
SALE OF ORIENTAL PUBLICATIONS, Rs.	134 2 0	
Commission on the Sale of Books, ..	.. ..	6 14 9
VESTED Fund, ..	1 5 8	
Paid to the Bank of Bengal for purchasing 3 pieces of Company's Paper, dated 28th February, 1857, bearing Interest at 5 per Cent., ..	.. 6,000 0 0	
Ditto ditto interest due on those Papers, ..	.. 188 6 5	
Ditto ditto commission for purchasing the Papers, ..	.. 15 0 0	
Ditto ditto for collecting Interest on Company's Paper, ..	.. 1 0 9	
Income Tax on Company's Paper, ..	.. 8 12 0	
Fee for renewing ditto,..	.. 2 0 0	
		6,215 3 2
CUSTODY OF ORIENTAL WORKS, ..	779 12 3	
Salary of Librarian at Rs. 30 per month, ..	360 0 0	
Establishment at Rs. 14 per month, ..	168 0 0	
Book binding, ..	140 4 0	
Books cleaning, ..	61 8 0	
A blank book, ..	3 2 0	
Packing charges, ..	1 4 9	
Stamp fee paid to the Bank for blank stamped cheques,..	1 9 0	
		735 11 9
BIBLIOTHECA INDICA, ..	59 8 9	
Freight, ..	18 7 9	
Packing Charges, ..	16 1 0	
Purchase of Postage Stamps, ..	3 0 0	
Petty Charges, ..	1 0 0	
		38 8 9
COPYING PURAN,, ..	31 8 0	
Stationery for copying Puran, ..	.. ..	1 0 0
TAITTIIRIYA SANHITA, ..	1,150 8 0	
Copying charges, ..	.. ..	8 0 0
DICTIONARY OF TECHNICAL TERMS, ..	0 0 0	
Printing charges, ..	.. ..	2,036 0 0
TAITTIIRIYA BRAHMANA, ..	224 0 0	
Printing charges, ..	.. ..	983 12 0
SURYA SIDDHANTA, ..	0 0 0	
Printing charges, ..	.. ..	543 0 0
SANHITA OF BLACK YAJURVEDA, ..	0 0 0	
Printing charges, ..	.. ..	954 6 0
VASAVADATTA, ..	0 0 0	
Printing charges,	423 12 0

Carried over, 11,946 4 5

Brought over, 19,757 1 0

Co.'s Rs.	19,757	1	0
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*Asiatic Society's Rooms,
The 31st Dec. 1860.*

Errors Excepted.

GOURDOSS BYSACK,
Assistant Secretary.

					Brought over, 11,946	4	5
COPYING MSS.,	..	..	0	0	0		
Copying charges,	..	..			..	14	14 0
TARICKH FEROZE SHAHI,	..	..	0	0	0		
Printing charges,	..	..			..	270	6 0
WHITE YAJURVEDA,	..	..	0	0	0		
For subscription to 20 Copies of ditto,					..	855	9 4
WAKIDY,	..	..	0	0	0		
Printing charges,	..	..			..	246	0 0
LIBRARY.							
Purchasing books,	..	..			..	30	0 0
						<u>13,363</u>	<u>1 9</u>
BALANCE.							
Bank of Bengal,	..	..	3,923	12	4		
Cash in hand,	..	..	3	10	5		
					3,927	6	9
Inefficient Balance,	..	..			2,466	8	6
						<u>6,393</u>	<u>15 3</u>
					Co.'s Rs...	19,757	1 0

EDWARD B. COWELL,
Secretary, Asiatic Society.

STATEMENT No. 3.

*Assets.**Liabilities.*

CASH.		1859	1860			1859.	1860.
Bank of Bengal,	Rs.	2,796 14 3	1,654 13 2	Hon'ble Sir J. W. Colvile, Kt.,	Rs.	276 8 0	276 8 0
Cash in hand,		9 14 9	85 7 6	J. W. Laidley, Esq.,		418 7 4	418 7 4
Inefficient Balance,		72 0 0	250 12 6	Deposits,		90 11 0	96 9 0
Company's Paper,		5,000 0 0	5,000 0 0	Messrs. Williams and Norgate,		1,383 2 8	647 11 11
		7,878 13 0	6,991 1 2	Salary, Establishment, and Contingent charges, say,		0 0 0	700 0 0
OUTSTANDINGS.				Extra copies of Journal articles, about,		0 0 0	325 0 0
Contributions,		4,607 5 4	4,313 14 3	Mr. Theobald's Shell Catalogue,		300 0 0	300 0 0
Admission Fee,		192 0 0	352 0 0	Birds' Catalogue, (Binding),		42 4 0	42 4 0
Library, Sale of Books,		212 0 0	218 0 0	Journal No. IV. of 1860, about,		0 0 0	300 0 0
Journal, Subscription to end of 1857-58 and 1858-59,		1,415 5 0	531 3 3				
Ditto, Sale of,		5 8 0	32 0 0				
Government allowance for December, 1860,		0 0 0	300 0 0				
		6,432 2 4	5,747 1 6			2,511 1 0	3,106 8 3

Errors Excepted.

GOURDOSS BYSACK,

*Assistant Secretary.**Asiatic Society's Rooms,**The 31st December, 1860.*

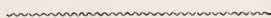
EDWARD B. COWELL,

Secretary, Asiatic Society.

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OF THE
ASIATIC SOCIETY OF BENGAL,

ON THE 31st DECEMBER, 1860.

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Radhanath Sikdár, Bábu, Calcutta.

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E. B. Harris, Esquire, Civil Surgeon, Monghyr.

Múnshee Amír Alí, Khan Bahadur, Calcutta.

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Capt. C. D. Newmarch, Pegu.

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D. H. Macfarlane, Esquire, Calcutta.

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Capt. H. S. Bivar, Assam.

Dr. F. J. Mouat, Calcutta.

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H. V. Bailey, Esquire, Calcutta.

F. A. Goodenough, Esquire, Calcutta.

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FOR FEBRUARY, 1861.

The monthly General Meeting of the Asiatic Society was held on the 6th Instant.

A. Grote, Esq., President, in the chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received—

1. From J. Obbard, Esq., a table of tides at the Kidderpore docks for the current year.

2. From the Secretary to the Government of India, Public Works Department, three sheets of a table showing the rise and fall of the River Indus, from 1845 to 1858.

3. From H. F. Blanford, Esq., a pair of horns of the common sheep of Southern India.

4. From G. C. Wallich, Esq., M. D., F. L. S., a copy of his work entitled “Notes on the presence of animal life at vast depths in the Sea.”

5. From H. P. LeMesurier, Esq., a box containing twelve specimens of stone weapons called “celts.”

6. From P. F. H. Baddeley, Esq., copy of a work entitled “Whirlwinds and Dust-storms of India,” with a book of plates.

The following gentlemen, duly proposed at the last meeting, were balloted for and elected ordinary members:—

Capt. H. Godwin Austin; Capt. A. B. Melville; Lieut. W. J. Stewart; R. Forrest, Esq.; Harry Duhan, Esq.; Stewart Bayley, Esq., C. S.; Major W. E. Warrand; A. S. Harrison, Esq., B. A.; Frederick S. Growse, Esq., C. S.; H. Bell, Esq., C. S., and J. Brown, Esq., M. D., B. M. S.

The following gentlemen were named for ballot at the next meeting:—

N. T. Davey, Esq., Revenue Surveyor, Dacca,—proposed by Major Thuillier, and seconded by Captain Gastrell.

Hon’ble Samuel Laing,—proposed by the president, and seconded by Sir Bartle Frere.

C. Boulnois, Esq., B. A., Profr. of Law, Presidency College,—proposed by Mr. H. F. Blanford, and seconded by Mr. Atkinson.

Charles Barnes, Esq.,—proposed by Captain Layard, seconded by the President.

Hon'ble H. B. Devereux,—proposed by the President, seconded by Colonel Baird Smith.

J. J. Gray, Esq., Maldah,—proposed (for re-election) by Mr. Atkinson, and seconded by the president.

A letter from Mr. C. G. Wray, announcing his withdrawal from the Society, was recorded.

The following letter from Mr. H. P. LeMesurier, Chief Engineer, Jubbulpore Line, E. I. R., was read to the meeting :—

Allahabad, January 14th, 1861.

A. GROTE, Esq., C. S.

DEAR SIR,—I have to-day forwarded to your address a small box containing twelve specimens of stone *hatchets* or celts, which you may consider worthy of a corner in the Museum of the Asiatic Society.

The circumstances under which these relics have been brought to light are as follows :—

Early in January, 1860, I was exploring the range of Ghats westward of the Chachye Falls on the River Tonse, $24^{\circ} 47' 30''$ N. Lat., $81^{\circ} 20' 45''$ E. Long.; passing through the village of Neehee $24^{\circ} 59' 30''$ N. Lat., $81^{\circ} 9' 40''$ E. Long. I halted my riding camel near the village Mahadeo and Peepul tree. Whilst talking to the Zemindar my eye caught the outline of two stones resting against the upright Mahadeo, which stones I at once recognized as celts.

I dismounted, and found five celts of various sizes, more or less perfect strewn, around the Hindu emblem.

The Zemindar said, he did not know where they came from, but he concluded his forefathers had placed them where I now saw them, and he therefore performed his devotions before them with the same forms and ceremonies as his ancestors had done.

He was willing enough to give them to me for a trifling consideration, more especially when I explained to him that they had in all probability been originally used for killing and flaying cattle, or other similar purposes.

The discovery of these celts rekindled my antiquarian zeal. Mr. Alexander Grant and one or two other members of the Engineering Staff of the Jubbulpore Railway became also interested in the subject, and celts were discovered in considerable numbers during the months of January, February and March. Starting from the river Tonse at Chachye the following somewhat irregular line will circumscribe the

celt-producing district in this part of India, beyond the limits of which, to the best of my knowledge, none of these instruments have been as yet discovered.

From Chachye then westward to Simireah, Birsingpore, and on to Kotee, thence north nine miles to Putna, and so still northerly down the Pysunnee Nuddy to Tirhowan or Kirwee, from which town in an easterly direction towards Mhow on the Jumna, 25 miles to Huttowa, thence E. S. E. 18 miles to Seorajpore, then south 11 miles to Punassa on Tonse, and so up Tonse S. W. back to Chachye.

Up to the present date, I should suppose that we have discovered upwards of one hundred celts, and I have ceased to search for them with any vigour in localities where they most abound. At Kirwee, for instance, a large number might be collected if there was any object to be gained by removing them from the temples and sacred places where they are now carefully stored.

I have found upwards of fifty celts myself, invariably at the Mahadeos, which abound in and near every village, and I am not aware that a single celt has been found in such a position as would lead us to suppose that it had remained concealed or hidden from the notice of the present inhabitants of the country.

Generally speaking, a single outlying celt is rare; there are more frequently two or three, and sometimes five or six, if not under the same tree, at all events in the immediate neighbourhood.

Of the celts which I forward to you, Nos. 1, 2, 3 were found near Manickpore, five or six miles north of Neehee near each other, perhaps within half a mile of the village.

Nos. 4, 5 and 6 at Surreaon, five miles N. by W. of Manickpore, at one Mahadeo; Nos. 7 and 8, at Khoh, four miles E. of Kirwee, and No. 9 at Tirhowan.

Tirhowan and Kirwee are two names for the same place.

Of Nos. 10, 11 and 12, I have lost the record, but I think they are three specimens from a batch of thirteen, which a native official at Kirwee collected for me.

Chitterkote, the Pysunnee Nuddy and Kirwee are places much venerated by Hindus, and abound in celts, which appear to have been collected together in the course of ages, by pilgrims coming across the hills, and by the inhabitants of the district, who found them in the spots where they had been abandoned by their original proprietors.

The natives (although I cannot induce them to assign any reason on the subject) are or were evidently as quick in discovering any celt or even portion of a celt as the most practised antiquarian.

Nos. 2 and 5 illustrate this fact, and many of the broken portions of celts which I have met with, retain but little trace of their original pattern.

I have as yet seen no celts in this district made from stone of other descriptions than the specimens I now send to you.

I am pretty well acquainted with the line of hills from Chunar to Kohrar Khas on the Tonse, but I have never seen a celt in that locality.

I have met with no celts save within the area which I have described in an earlier paragraph.

From Meyhere to Jubbulpore for a few miles east and west of the Deccan road I know the country very well; it has yielded me no celts up to date.

The celt question has occupied my attention from time to time during the past ten years, but in January, 1860, I was not aware of the interesting discoveries of celts in the more recent geological formations upon the continent of Europe.

The result of much observation of localities producing celts, and of information collected from various sources, has impressed me with the opinion that the celt-using race were partial to dwelling near the sea shore, in the vicinity of bluff cliffs and head-lands. In all probability they derived a considerable portion of their food from the shell-fish and other easily-captured inhabitants of the rocks and pools.

This conviction is strengthened by the vast collections of limpet-shells bearing strong traces of fire, which I have frequently found at a depth of two or three feet below the present surface of the ground in the immediate vicinity of stone implements when carrying out excavations for engineering works.

It has always struck me very forcibly when examining the country under notice in this memo., that at the period when the celt-users dwelt in this part of India, the Gangetic plain was submerged, and the coast line was represented by the bold cliffs of the Vindhyan and Kymore ranges. Should such have been the case, the vicinity of Kirwee must have presented much very beautiful natural scenery

—numerous land-locked bays, surrounded by bold cliffs, with picturesque rocky islets at short distances from the mainland in all directions—the very spot of all others where I should have expected to find traces of the celt-making people—and there the celts now are, not only collected in large numbers at the more sacred spots, but scattered in twos and threes at every village along the hill foot.

The vicinity of Neehee and of Karehun a little to the west of Neehee, near the mouth of the Hindul valley, presents the same natural features, and is also rich in celts, which are not so numerous where the hills present a more uniform and regular outline.

The celts do not appear to have been carried very far from the spots where the Hindus found them; perhaps not more than a day's journey in any case. I think therefore that a careful examination for a breadth of ten miles on either side of each range of hills, throughout the country would enable us to plot on a map, the tracks and localities most frequented by the race whose history and period are now occupying some antiquarian notice.

I have never heard of a celt in the Doab, and I found no traces of them when examining the course of the Sutlej river up to the snow in the latter part of 1857.

At Manickpore I also found a manufactured stone of a peculiar shape, somewhat resembling a three or four pound grocer's weight as used in England. This stone, made from the same material as the celts, is of a pattern which I have, on more than one occasion, noticed in archæological museums. It is generally indexed as a "hammer." The Manickpore Brahmins had converted it into a Mahadeo.

It proves to be an instrument used by potters of the present day for patting the insides of the earthen vessels to smooth away any inequalities before baking the pottery. I noticed a village workman using a precisely similar article made of hard burnt clay two or three days after I had found what at the time I thought was a stone hammer.

I shall send the stone and clay implements to England at an early date to clear up any doubt as to the purpose which the so-called hammer was made to serve. The ruder arts have undergone so little change in India during the last 1,500 years, that carefully chosen collections of Indian tradesmen's tools would, if sent home, solve many mysteries. Every leather dresser in Cawnpore to this day uses a wooden celt exactly resembling the stone ones, save that the sides

are flatter, but the peculiarly bevelled cutting edge is strikingly similar to the ancient eelt.

I have never found a trace of any flint eelts, but in 1856, near Nyagurhee, 28 miles east of Chachye, I found a very perfect chert arrow-head of the same shape and size as those which the owners of basaltic eelts manufactured from such chert or flint eelts as they could procure by barter or force from people who dwelt in a chert country.

A chert eelt was almost always chipped into arrow-heads; I was once so fortunate as to unturf a level spot of ground in the Island of Alderney, where an extensive arrow-head manufactory had been carried on; and the whole process was explained to me as clearly as if I had walked into the workman's shed and watched his operations.

Should you think the eelt enquiry worth pursuing, or a further collection made, I shall be happy to hear from you, and to carry out any suggestions you may offer.

With every apology for troubling you with this long story.

I remain, &c.

(Sd.) H. P. LEMESURIER,
Chief Engineer, Jubbulpore Line, E. I. R.

In a letter subsequently received from Maniekpore, Mr. LeMesurier says:—

“I have just heard that many eelts have been found at Nagode recently. I have not seen them. I hear also that there are many at Kotee, 12 miles, N. E. of Nagode.”

“Captain Hodgson has this morning found five under one tree at this place.”

The Council submitted a report announcing that the following Sub-Committees had been appointed for the current year:—

FINANCE.

Colonel Baird Smith.

Babú Rajendralal Mitra.

PHILOLOGY.

F. E. Hall, Esq.

Rev. J. Long.

Dr. E. Röer.

Capt. W. N. Lees.

Babú Rajendralal Mitra.

LIBRARY.

Babú Ramaprosad Roy.
Capt. W. N. Lees.
R. Jones, Esq.
Dr. J. Fayrer.
Babú Rajendralal Mitra.

NATURAL HISTORY.

T. Oldham, Esq.
Dr. T. Thomson.
Dr. W. Crozier.
W. Theobald, Esq.
H. F. Blanford, Esq.
Dr. J. Fayrer.
Major W. S. Sherwill.

METEOROLOGY AND PHYSICAL SCIENCE.

The Ven'ble J. H. Pratt.
Major H. L. Thuillier.
Babú Radha Nauth Sikdar.
T. Oldham, Esq.
Col. Baird Smith.
Dr. H. Halleur.

COIN COMMITTEE.

Capt. W. N. Lees.
Babú Rajendralal Mitra.

Communications were received—

1. From Baboo Radha Nauth Sikdar, an abstract of the Meteorological observations taken at the Surveyor General's Office in May, June, and July last.
 2. From Lord H. Ulick Browne, extracts from the Report of Major H. Green, Political Agent at Kelat, for 1859-60, together with a copy of an inscription found on a rock near the village of Neihara in Belochistan.
 3. From Capt. J. C. Harris, through Col. Baird Smith, a paper "On the relation between rain-fall and flood in the basin of the Mahanuddy river."
- Col. Baird Smith read the paper to the meeting, and made some interesting comments on the subject of it.

The thanks of the Meeting were accorded to Capt. Harris for his valuable paper, and also to Col. Baird Smith.

The paper will be published in a forthcoming number of the journal.

The Officiating Librarian submitted reports for November, December and January last.

LIBRARY.

The following additions were made to the library in November, December and January last.

Presented.

Whirlwinds and Dust Storms of India with a Book of Plates.—By P. F. H. Baddeley.—BY THE AUTHOR.

The Annals of Indian Administration, Part IV. Vol. IV.—BY THE GOVT. OF INDIA.

The Oriental Christian Spectator, Vol. I. No. 12.—BY THE BOMBAY GOVERNMENT.

Report on the Zanzibar Dominions. By Lt.-Col. Rigby,—being No. LIX. of the Selections of the Bombay Government.—BY THE SAME.

The Oriental Baptist for January, 1861.—BY THE EDITOR.

The Calcutta Christian Observer for January, 1861.—BY THE EDITOR.

Report of the Committee of the Bengal Chamber of Commerce.—BY THE CHAMBER.

The Twenty-first Report of the Proceedings of the Calcutta School Book Society.—BY THE SOCIETY.

Notes on the Presence of Animal Life at vast depths in the sea. By G. C. Wallich, M.D., F. L. S. &c.—BY THE AUTHOR.

Catalogue of Lepidopterous Insects in the Museum of the East India House.—BY THE SECRETARY OF STATE FOR INDIA.

List of the Geological Society of London, September 1st, 1860.—BY THE SOCIETY.

List of the Linnean Society of London for 1858-59.—BY THE LINNEAN SOCIETY.

Address of the President of the Linnean Society in 1858-59.—BY THE SAME.

Proceedings of the Royal Society of Edinburgh, Session 1858-59.—BY THE SOCIETY.

The Quarterly Journal of the Geological Society, Vol. XVI. Part 4, No. 64.—BY THE SOCIETY.

Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Philo-

sophisch—Historische classe, Band XXX. Heft 2 and 3, B. XXXI. H. 1, 2 and 3 and Band XXXII. Heft 1 and 2.—BY THE ACADEMY.

Register zu den Bänden 21 Bis 30 Der Sitzungsberichte der Philosophisch-Historischen classe, Band 3.—BY THE SAME.

Sitzungsberichte, Mathematisch-Naturwissenschaftliche classe, Band XXXVI. Nos. 13 to 16, Band XXXVII. Nos. 17 to 22 and Band XXXVIII. Nos. 23 to 28.—BY THE SAME.

Register Zu Den Bänden, 21 Bis 30 Der Sitzungsberichte der Mathematisch-Naturwissenschaftliche classe, Band 3.—BY THE SAME.

Archiv für Kunde Österreichischer Geschichts-Quellen, Band XXI. Hälfte 2, Band XXII. H. I and 2, and B. XXIII. H. I. and 2.—BY THE SAME.

Almanach der Akademie der Wissenschaften, Part IX. 1859.—BY THE SAME.

Notizenblatt, Part IX. for 1859.—BY THE SAME.

Österr, Geschichts-Quellen, Bands XVI. and XVIII.—BY THE SAME.

Die Fossilen Mollusken, von Dr. M. Hörnes. II. Band, Bivalven.—BY THE SAME.

Ansprache gehalten am Schlusse Des Ersten Decenniums for 1859. Von W. Haidinger.—BY THE SAME.

Rede bei der Hundertjährigen Stiftungsfeier, Von G. L. von Maurer, (2 copies).—BY THE SAME.

Erinnerung an Mitglieder, Eine Rede. Von Dr. Carl Friedrich Philipp von Martius.—BY THE SAME.

Erinnerungen an Johann Georg von Lori, Eine Rede. Von Dr. Georg Thomas von Rudhart.—BY THE SAME.

Jahrbucher der K. K. Central—Austalt für Meteorologie und Erdmagnetismus. Von Karl Kreil, Band IV.—BY THE SAME.

Jahrbuch der K. K. Geologischen Reichsanstalt, 1859, X. Jahrgang, No. 2.—BY THE SAME.

Magnetische Untersuchungen, Von Dr. J. Lamont.—BY THE SAME.

Untersuchungen Des Erdmagnetismus, Von Dr. J. Lamont.—BY THE SAME.

Monatsbericht for 1859.—BY THE SAME.

Monumenta Saecularia, Classe I.—BY THE SAME.

Gelehrte Anzeigen, Band 48.—BY THE SAME.

Abhandlungen der Akademie der Wissenschaften Zu Berlin for 1854 and 1858.—BY THE SAME.

Antiquarisk Tidsskrift from 1855 to 1857.—BY THE ROYAL SOCIETY OF NORTHERN ANTIQUARIES OF COPENHAGEN.

Cabinet D'Antiquites Americaines a Copenhague.—BY THE SAME.

List of Works presented to the Royal Society of N. Antiquaries of Copenhagen from 1855 to 1857.—BY THE SAME.

The Northmen in Iceland, 1859.—BY THE SAME.

Annaler for Nordisk Oldkyndighed og Histoire for 1846, 1847, 1848, 1851, 1852, 1854, 1856 and 1857.—BY THE SAME.

Atlas De l'Archéologie Du Nord.—BY THE SAME.

Transactions of the Royal Society of Edinburgh, Vol. XXII. Part I.—BY THE SOCIETY.

List of the Fellows of the Royal Society, 30th November, 1859.—BY THE SOCIETY.

Professor Huxley's Oceanic Hydrozoa.—BY THE ROYAL SOCIETY.

Observations made at the Magnetical and Meteorological Observatory at St. Helena, under the superintendence of Major-General Edward Sabine, Vol. II. 1844 to 1849.—BY THE BRITISH GOVT.

The Transactions of the Linnean Society of London, Parts 3 and 4, Vol. XXII.—BY THE SOCIETY.

Journal of the Proceedings of the Linnean Society, Botany, Nos. 7 and 8, Vol. 2; Nos. 9, 10, 11 and 12, Vol. 3; Nos. 13, 14 and 15, Vol. 4 and Nos. 1 and 2, Supplement to Botany:—Zoology, Nos. 7 and 8, Vol. 2; Nos. 9, 10, 11 and 12, Vol. 3 and Nos. 13, 14, 15, Vol. 4.—BY THE SAME.

Bulletin De L'Academie Impériale des Sciences de St. Pétersbourg, Tome I. (2 copies).—BY THE IMPERIAL ACADEMY OF ST. PETERSBURGH.

Mémoires de l'Académie Imperiale des Sciences de St. Petersburg, Tome I. Nos. 1 to 15.—BY THE SAME.

Purchased.

Baron D'Ohssou's Histoire Des Mongols, 4 Vols.

Revue des Deux Mondes for 15th October and 1st November, 1860.

Academiae Jenensi Salecularia Tertia, Diebus 15th to 17th August, 1858.

The Annals and Magazine of Natural History, Vol. 6, Nos. 34 and 35.

The Literary Gazette, Nos. 121 to 124.

The Natural History Review for October, 1860.

Comptes Rendus, Nos. 14 to 18 of Tome LI.

Tables Des Comptes Rendus des Seances, Premier Semestre, 1860, Tome L.

Revue De Zoologie, Nos. 9 and 10 of 1860.

Annales des Sciences Naturelles Tome XIII. Zoologie, Nos. 1, 2, 3 and 4;—Botanique No. 1.

The American Journal of Science and Arts for September, 1860.

Essai de classification des Suites Monétaires De la Géorgie, Par M. Victor Langlois.

Geschichte des Qorâns, von Theodor Nöldcke.

Tuhfat ul Abrár of Mullá Jámí. By Forbes Falconer, M. A.

Salámán u Absál ditto ditto.

Palæontology, or a Systematic Summary of Extinct Animals and their Geological Relations. By Richard Owen, F. R. S.

LALGOPAL DUTT,

Offg. Assist. Secy. and Librarian.

Report of Curator, Zoological Department, May and June.

1. R. Swinhoe, Esq., H. M. Consulate, Amoy. A rich collection of Chinese birds, many of which, however, are merely sent on inspection; and four species of mammalia presented to the Society. Also a small collection of birds from the Philippine Islands, and another from S. Africa, which are to be returned.

MAMMALIA.

NYCTINOMUS INSIGNIS, nobis, *n. s.* Like N. PLICATUS, (Hardwicke), of Bengal, but very considerably larger and more darkly coloured, with the ear-conch proportionally somewhat larger. Male (in spirit) $5\frac{1}{2}$ in. from nose to tail-tip, the tail $1\frac{7}{8}$ in., and protruding 1 in. beyond the interfemoral membrane; expanse $16\frac{3}{4}$ in.; fore-arm $2\frac{1}{2}$ in.; longest finger $4\frac{1}{2}$ in.; tarse *plus* $\frac{7}{8}$ in.; breadth of ears apart *plus* 2 in. The finest of the Asiatic species hitherto discovered,—of course excepting CHEIROMELES TORQUATUS, which Temminck refers to the same genus.

RHINOLOPHUS ROUXI, Temminck. Rather small and dark-coloured, but otherwise not satisfactorily distinguishable from Bengal specimens.

LUTRA NAIR, F. Cuv.: *L. chinensis*, Gray; *L. tarayensis*, Hodgson, &c. A flat skin. Apparently identical with our common Bengal Otter, and a stuffed specimen we have from Algeria (!) is even undistinguishable, though obviously distinct from the common European Otter. A skull from S. Malabar is specifically identical with Bengal specimens,—at least it offers no differential character.

LEPUS SINENSIS, Gray, Hardwicke's *Ill. Ind. Zool.* Two skins (since mounted), and a skull. This is a very distinct small Hare, with shortish limbs, ears, and tail; by no means well represented by Hardwicke, either as regards form or colouring; but the species appears to be, beyond question, that which he has figured: nor can the fur

be justly termed "very harsh," as Mr. Waterhouse stated upon the authority of Dr. J. E. Gray (*Rodentia*, p. 81). As compared with the specimens under examination, the figure referred to is too deeply rufescent, and the paws are too dark-coloured and also too slender. Length 15 or 16 in. to base of tail, the tail (vertebræ) about 2 in., or with hair 3 in.; hind-foot from tarsal joint, 4 in. The general colouring approximates that of *L. RUFICAUDATUS* of Bengal and Upper India, but the fur is much longer, the piles being very straight, and having a greater admixture of black upon the upper-parts: the most conspicuous distinction consisting in the shortness of the ears in *L. SINENSIS*, then the fuller coat, and the shorter tail and limbs; the tail being more or less blackish on its upper surface. Nape, with the inner portion of the exterior surface of the ear-conch, pale fulvous, rather largely tipped on the ear with black; limbs also pale fulvescent; the throat and lower-parts generally white, more or less fulvous-tinged, especially in front of the neck. Skull that of a true *LEPUS*, as distinguished from *CAPROLAGUS* (*J. A. S.* XIV, 247), except that the supra-orbital process agrees with that of the latter in form. Extreme length of lower jaw with teeth, $2\frac{1}{2}$ in. (in a straight line); depth from coronoid, $1\frac{1}{2}$ in.; surface of crowns of upper grinders, $\frac{9}{16}$ in.

The Chinese Pangolin is erroneously assigned to *MANIS PENTADACTYLA* in *J. A. S.* XXIX, 93, as also (? from Chusan) by the late Dr. Cantor in *Ann. Mag. N. H.* IX, (1842), p. 482; it being the *M. JAVANICA*, Desm., as correctly determined by Mr. Arthur Adams in *Proc. Zool. Soc.* 1859, p. 132. The *M. aurita*, Hodgson, *J. A. S.* V, 234, is again identical; whereas *M. LEUCURA*, nobis, *J. A. S.*, XI, 454, is akin, but distinct,—having the same auricle, but much smaller and more curved claws, and less development of the bristles between the scales; the *leucoid* terminal third of tail occurs in all the specimens examined.

In *Ann. Mag. N. H.* IX, (1842), note to p. 274, Dr. Cantor remarks that "two fine Deer, *CERVUS AXIS*, of which the Chinese are very fond, were brought in 1840 in a junk from Formosa to Chusan." How the Formosa Deer could possibly be mistaken for *C. AXIS* by any practised zoologist, it is difficult to comprehend. I have lately received from Mr. Swinhoe (on private account) two living bucks and a doe of *C. SIKA* from Japan. This is different from the *C. pseudaxis* lately

imported into France from Mantchuria and the north of China, to which latter the Formosan animal will perhaps prove to belong. The doe of *C. SIKA*, in summer dress, is of a dull fawn-colour, *menilled* with whitish, though less conspicuously so than many Fallow Deer in summer; there is a large pure white patch on the buttocks below the root of the tail, the longest white hairs composing it diverging outwards (a character which may well be lost in a dry skin, to which attention had not been paid in this particular); the white being surmounted by a black border which is broadish in the middle and passing down a little on each side of the white, so as to form the letter T; tail longish, and white, with a brown mesial line; a black dorsal list, more strongly developed along the neck and between the shoulders; front of the neck, lower-parts, and inside of limbs, dull greyish a little albescent; outside and front of the limbs somewhat nigrescent, with the oval tuft of whitish hair below the hock (externally) very conspicuous: ear-conch somewhat large, grey without, contrasting with the fawn hue of the body, and with whitish hairs interiorly, especially fringing the anterior margin. The young buck is nearly similar, but the *menilling* is less distinct, as likewise the black dorsal and humeral list. The older buck is merely a little darker, with the pale spots all but obliterated; his horns are still those of an immature animal, having simply a brow-antler, and a forked crown, the bifurcation of which is parallel to the axis of the body. Height of the elder buck, at croup, about $2\frac{1}{2}$ ft.; tail (vertebræ) about 4 in., or with hair 7 in.; head about 11 in.; and ear about 6 in. Doe smaller, in the usual proportion.*

* In p. 112 *antea*, I described a new Cassowary by the name *CASUARIUS UN-APPENDICULATUS*; being the fourth known species of the genus. I regret to add that this hitherto unique bird has since died, and is mounted as a stuffed specimen, which I hope to exhibit at the next meeting of the Society. Already Mr. P. L. Selater has announced a fifth species, which he styles *C. BICARUNCULATUS*,—founded on a specimen now living in the London Zoological Gardens (*Proc. Zool. Soc.*, May 8th, 1860). He has likewise described a third species of Nandou, by the name *RHEA MACRORHYNCHA* (*ibid.*, April 24th), also from an example now living in the garden; and the Zoological Society are further fortunate in having obtained living specimens of the new barred Emeu (*DROMAIUS IRRO-RATUS*, Bartlett), from W. Australia. The Society has at this time the finest collection of living *brevipennate* birds ever brought together,—*viz.* Ostriches (*STRUTHIO*) from N. and from S. Africa, three species of S. American Nandou (*RHEA*), two species of Emeu (*DROMAIUS*), three of Cassowary (*CASUARIUS*), and one of the three (or four?) species of 'Kiwi' (*APTERYX MANTELLII*). This sudden discrimination of so many species of *brevipennate* birds is most remarkable.

AVES.

Of the Chinese birds sent, those to be returned are distinguished by a cross (†) prefixed to their names.

†LITHOFALCO AESALON. Old female. Amoy.

SCOPS LEMPIJI, (Horsfield). Wing $6\frac{7}{8}$ in. Tail $4\frac{1}{4}$ in. Fowchow.

†SC. BAKKAMÆNA, (Pennant). Wing 6 in. Tail $2\frac{3}{4}$ in. Grey specimen.

ATHENE CUCULOIDES, (Vigors). Wing $6\frac{1}{4}$ in. Tail 4 in. Fowchow.

NINOX SCUTELLATUS, (Raffles). Wing $8\frac{1}{2}$ in. Tail 5 in. Fowchow.

(The four Owls here noticed are, all of them, of rather unusual size, and with strongly contrasted colouring; but are not to be justly separated as species, if even as races. A specimen of ATHENE CUCULOIDES from Chusan is also of the same large size.)

PICUS CABANISI, Maleherbe.

†CUCULUS STRIATUS, Drapiez.

†C. NISICOLOR, Hodgson. Before received from Macao.

CAPRIMULGUS DITISCIVORUS, Swinhoe. The supposed variety of C. INDICUS, with wings $8\frac{1}{2}$ in. long, noticed in *J. A. S.* XIV, 208, and there mentioned as "probably not Indian, but from the eastward." It was doubtless with other specimens from the dispersed Macao museum. The small race from the Nilgiris (and also the more elevated regions of Ceylon) noticed in the note, *loc. cit.*, I have since named C. KELAARTI.

†C. — *n. s.* "River Night-jar." A very beautiful species akin to C. MONTICOLUS, Franklin, of India, and C. AFFINIS, Horsfield, of Java.

ACANTHYLIS CAUDACUTA, (Latham): *Chætura nudipes*, Hodgson. Accords with Gould's figure in the 'Birds of Australia' in having a white forehead, but is otherwise undistinguishable from Himalayan examples.

CYPSELUS SUBFURCATUS, nobis (Horsfield's Catalogue); *C. affinis* (?) *apud nos*, *J. A. S.* XXIX, 95.

†MUNIA, *n. s.*? Akin to M. UNDULATA of India and M. PUNCTULARIA of Malasia. "Amoy."

†MUNIA, *n. s.* "Shanghai."

LIGURINUS SINICUS, (L.).

†CITRINELLA (?), Bonap., *n. s.**

†EMBERIZA CANESCENS, Swinhoe, 'Ibis,' Vol. II, 62. A pretty Bunting affined to *E. SCHLENICULUS*, L.

†E. AUREOLA, Pallas. "O-seer-keo, near Amoy."

†SPIZIXOS, nobis, *n. s.* Crestless, with black forehead and throat, and yellow on middle of belly. Otherwise similar to *SP. CANIFRONS*, nobis, of the Khásya hills; and perhaps identical with a second species of which Mr. McClelland possesses a figure, from Asám. "Pih-ling hills near Fowchow."

†GARRULAX, *n. s.* Very MALACOCERCUS-like.

†SUYA, Hodgson, *n. s.*

†POMATORHINUS MUSICUS, Swinhoe. "Formosa."

†P. — *n. s.* "Pih-ling hills near Fowchow."

MYIOPHONUS CERULEUS, (Scopoli): *Turdus violaceus*, Latham; *Merle bleu de la chine*, Sonnerat; referred doubtfully to *M. HORSFIELDI* of S. India in *The Ibis*, Vol. II, 55. Conspicuously distinct from the Himalayan *M. TEMMINCKII*, being much smaller, with a black bill, and exhibiting many other differences. Closed wing $6\frac{1}{3}$ in.; tail $4\frac{1}{4}$ in. Bill to gape $1\frac{1}{2}$ in. Tarse 2 in. Amoy.

†TURDUS FUSCATUS, Pallas: *T. Naumanni*, Temminck. "Amoy."

GEOCICHLA DISSIMILIS, nobis, *J. A. S. XVI*, 144. Until seeing this second specimen, I was disposed to regard this bird as a casual variety of *G. UNICOLOR*, (Tickell); but it now seems to be a particular race, which in India is very rare.

†LARVIVORA, Hodgson, *n. s.* "Amoy."

†CUMYCIAS MELANOPS, (Vigors). "Amoy."

†HEMICHELIDON FERRUGINOSUS, Hodgson: *Muscicapa rufescens*, Jerdon; *Batalis Matui*, Layard; *Ibis*, II, 57. "Amoy."

†H. LATIROSTRIS, (Raffles): *Muscicapa cinereo-alba*, Temminck and Schlegel. "Amoy."

†H. — *n. s.* (Affined to the preceding).

†ACROCEPHALUS (?) BISTRIGICEPS, Swinhoe, *Ibis*, II, 51. A peculiar type, intermediate to *Culamodyta* and *Locustella*

†LOCUSTELLA, *n. s.*

†MYIRAGRA AZUREA, (Boddaërt), fæm.: doubtless *Tchitrea cæra-*

* To the list of Chinese birds must be added the common Crossbill (*LOXIA CURVIROSTRA*), a living specimen of which I have lately received from Mr. Swinhoe, together with a living *TURTUR CHINENSIS*.

leocephala, Quoy and Gaymard, apud Swinhoe, *Ibis*, II, 57.

DICRURUS CINERASCENS, Horsfield. "Fowehow."

†HYPSIPETES, Vigors, *n. s.* From Pih-ling hills near Fowehow. Differs little from H. MACLELLANDII, Horsfield, but is darker on the back and paler on the ventral region.

ORIOLOUS CHINENSIS, Gm. Distinct from O. ACRORHYNCHOS, Vigors, which is common in the Canton district.

ZOSTEROPS JAPONICUS, Temminck and Schlegel.

ANTHUS RUFOSUPERCILIARIS, nobis, *J. A. S.* XXIX, 105. Described from the Andamán islands and from Pegu. Two specimens from Amoy are decidedly of the same species; but, evidently in breeding dress, have the entire throat and sides of the head dilute ferruginous. Most probably this species bears a prior and better appellation.

†TURNIX DUSSUMIERI, (Temminck).

†CHARADRIUS LESCHENAULTII, Lesson: *Ch. rufinus*, nobis.

ACTITIS GLAREOLA, (Gmelin). Amoy.

TRINGA MINUTA, Leisler. Amoy.

GALLINAGO MAJOR, (L.)

GALLICREX CRISTATUS, (Latham).

AIX GALERICULATA, (L.)

ANAS GLOECITANS, Pallas; *A. formosa*, Gmelin.

A. FALCARIA, Pallas, *Reise: A. falcata*, Pallas, *Fauna Rosso-asiatica*; *Querquedula multicolor* (?), Seopoli, apud Swinhoe, *Ibis*, II, 67.

A small ACCIPITER, unlabelled, is probably from the Philippines (Luçon). It is in juvenile plumage, and appears to be referable to ACC. VIRGATUS, (Tem.), *mas*; but the tail-bands are narrower than usual, and the under-parts are whiter.

The other Philippine species are—

BUCEROS PANAYENSIS, Seopoli, *juv.*

CEYX TRIDACTYLA, Gmelin, if not also of Seopoli; *nec apud* Jerdon (*Ill. Ind. Orn.*), which is C. PURPUREA, (Gm.), of India and Burma; *nec apud* Jardine and Selby (*Ill. Orn.*), which is C. RUFIGRIS, Strickland, of W. Malasia. Two other species of this beautiful little group exist in the C. LEPIDA, Tem. (*Pl. Col.* pl. 595, f. 1), and C. MELANURA, Kaup,—both from the Moluccas. If Sonnerat's figure and description (*Voy. a la Nouv. Guinée*, p. 67,) refer truly to this

species, they are perhaps from a young individual, differing somewhat in plumage from the adult.

MULLERIPICUS JAVENSIS, (Horsfield); *Picus leucogaster*, Reinwardt. Can this be truly from the Philippines?

CALORNIS ALBIFRONS, nobis, *n. s.* Nearly affined to *C. DAURICUS*, (Pallas), with which it has probably been confounded; but with a shorter tail, the crown and throat white, with the same occipital black spot as in the other. Nape, mouth, rump and upper tail-coverts, brown; the lower-parts dingy-whitish with a brown tinge, and a brownish-ruddy stain on the cheeks. Wings and tail nearly as in the other. Bill and feet also similar. Length of wing 4 in.; of tail 2 in. only. Probably a female bird, less bright in colouring than the other sex.

CORYDALLA INFUSCATA, nobis, *n. s.* (*C. HASSELTII*, Brehm, of Java?) Larger than *C. RUFULA*, with a proportionally longer bill: the upper-parts much darker in colour, blackish with olive-brown lateral edgings to the feathers. Supercilia and lower parts albescent, whiter on the throat, with a few linear blackish spots on the breast. Outermost tail-feather chiefly white, with a dark stem; the penultimate dark on its outer web, and on the outer half of its inner web, leaving the intermediate portion white. Bill dark above, yellowish white below; legs and claws pale. Wing $3\frac{1}{2}$ in.; tail $2\frac{3}{4}$ in.; bill to gape 1 in.; tarse $1\frac{1}{8}$ in.; hind-claw $\frac{1}{2}$ in.

GRAUCALUS DUSSUMIERI, Lesson.

GR. LAGUNENSIS, Bonap., *Comptes Rendus*, tom. XXXVIII (1854), p. 540; where also the preceding species is noticed as inhabiting Mindanao, and as being distinct from the GR. FASCIATUS (*Coracina fasciata* of Vieillot). Now the name *fasciatus* applies admirably to the Philippine bird here confidently presumed to be DUSSUMIERI, which has the lower-parts from the breast beautifully banded with black and white; the rump-feathers also having a subterminal black band and white terminal edge, the tertiaries also being rather broadly white-margined, the secondaries less broadly so, and the primaries having only a white extreme margin; tail-feathers attenuating at tip to a somewhat acute point, whereas in *C. LAGUNENSIS* they are broad and rounded at the tips.

VOLVOCIVORA — ? In the following page of the *Comptes Rendus*, the late Prince of Canino recognised four species of Mr. Hodg-

son's genus *VOLVOCIVORA*, of which the present is most probably one. As compared to *V. SILENS*, (Tickell, *V. melaschistos*, Hodgson,) of India, it is of a paler colour throughout, especially on the rump where the feathers are much more strongly spinous; the abdominal region also is pale, and the lower tail-coverts are whitish; the secondaries being slightly margined and the tertiaries more strongly tipped with white. The second primary is also shorter, with reference to the third primary.

PSEUDOLALAGE, nobis, *n. g.* General aspect of *LALAGE*, Boie; but having the rump-feathers strongly spinous, whereas in *LALAGE* they are quite soft and flexible.

PS. MELANOLEUCA, nobis, *n. s.* Male black (glossed with green) contrasting with pure white, except on the rump and upper tail coverts where the white is tinged with grey; these colours disposed much as in the male of *LALAGE ORIENTALIS*, (Gm.), except that there is no white supercilium, and the white on the outside of the wing forms a single elongated patch, confined to the outer webs of the tertiaries and their greater coverts only; the white tipping the caudal feathers being also much less extended. Female pale grey above, but retaining the black on the wings and tail; the white of the fore-neck, breast, and flanks a little tinged with grey, having faintish transverse bars of the hue of the back. Length about 9 in., of wing $4\frac{5}{8}$ in., and tail $3\frac{1}{8}$ in.; bill to gape $1\frac{1}{8}$ in.; and tarse $\frac{7}{8}$ in. Female a trifle smaller. There is a faint appearance of barred markings on the pale rump of the female.

CARPOPHAGA SYLVATICA, Tickell. Young, which does not differ, that I can perceive, from that of the Indian and Burmese species.

CHALCOPHAPS INDICUS, (L.) Female. The same remark applies, except that there is a circlet of rufescent feathers surrounding the bare skin of the orbits.

TURNIX OCELLATA; *Oriolus* (!) *ocellatus*, Scopoli: *Tetrao luzonensis*, Gmelin; *Hemipodius thoracicus*, Temminck. (*Caille de l'Isle de Luçon*, Sonnerat, *Voy. a la Nouv. Guin.*, p. 54). Female, distinguished by having a deep ferruginous-coloured nape, a blacker head with minute white specks, and some other minute distinctions, from the kindred races of Java and Malacca (*pugnax*, Tem., *atrogularis*, Eyton,) of India generally and Ceylon, (*taigoor*, Sykes), of Bengal

(*bengalensis*, nobis,) and probably others; but all are hardly other than local races of one species.*

Of the S. African collection, it will be sufficient to notice,

PASSER ARCUATUS, Tem. Female.

POLIOSPIZA, *sp.*; congeneric with *P. TRISTRIATA*, Rüppell.

SERINUS (?) SULPHURATUS; *Crithagra sulphurata*, Swainson (Jardine and Selby, *Ill. Orn.*, pl. 109).

MEGALONSPHONYX RUFICEPS, (Rüpp.). Identical with Abyssinian specimens.

HARPOLESTES (Cabanis) LONGIROSTRIS; *Telephonus longirostris*, Swainson, (2 $\frac{1}{4}$ Centen.)

MONTICOLA RUPESTRIS, (Vieillot). Female.

BESSONORNIS RECLAMATOR, (Vieillot).

COSSYPHA SUPERCILIARIS, (L.)

RUTICILLA (MARGINELLA? Bonap.; in nestling plumage). All the tail-feathers dusky-tipped, with rufous extreme terminal margin. Wing 3 $\frac{1}{4}$ in. Tail 2 $\frac{1}{2}$ in.

MACRONYX CAPENSIS, (Vieillot?)

DICRURUS MUSICUS, (Vieillot). Young.

TCHITREA PERSPICILLATA, (Swainson.) Female.

GRAUCALUS, *sp.* Uniform ash-grey without markings, rather paler below; bill and feet black, the bill proportionally small. Wing 5 $\frac{1}{4}$ in.; tail 5 in.

PHYLLASTREPHUS CAPENSIS, Swainson.

PYCNONOTUS NIGRICANS, (Vieillot). Identical with a specimen said to have been brought from Jidha in Arabia!

TYMPANISTRIA BICOLOR, Reichenbach; *Columba tympanistria*, Temminck.

2. Mr. J. K. Hamilton, of Calcutta. A fine living PYTHON MOLURUS, about 12 ft. long, caught in the Bengal Sundarbáns.

E. BLYTH.

* It is much to be regretted that Mr. Hugh Cuming's valuable collection of Philippine birds was permitted to be dispersed without any list having been published of them. A list of the known species of the Philippines is at present a desideratum.

